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THE UNIVERSITY OF ALBERTA

STAFF PERCEPTIONS OF THE STAFF DEVELOPMENT PROGRAM AT THE NORTHERN ALBERTA INSTITUTE OF TECHNOLOGY (NAIT)

by

NICHOLAS AIDOO-TAYLOR

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF EDUCATIONAL ADMINISTRATION

EDMONTON, ALBERTA

SPRING 1986

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.....

Supervisor

.....

.....

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.....

External Examiner

Date April 10, 1986

DEDICATED TO

My father, Joseph Aidoo-Taylor, for the encouragement

and

My daughters, Theresa, Eudora and Paulina for the great sacrifices

ABSTRACT

The main purpose of this study was to examine the perceptions of the instructional staff at the Northern Alberta Institute of Technology (NAIT) regarding the characteristics and effectiveness of the activities and practices of the Institute's staff development program. Two models based on concepts of systems theory provided the conceptual frameworks for the study. One model compared the emphasis of orientation of the staff development program regarding the two perspectives of (1) meeting institutional requirements; and (2) addressing personal needs of faculty. The other model provided a rationale for selecting variables used in describing the program characteristics and in assessing effectiveness.

A questionnaire distributed to a stratified sample, randomly selected from the instructional staff at NAIT, yielded 73 percent returns. The stratification was based on staff positions and the three principal instructional divisions of the Institute.

The findings indicated that, in the perceptions of the respondents, the emphasis of staff development at NAIT was directed more toward meeting institutional requirements than to addressing individual personal needs. It was also found that the main purpose of staff development -- to improve teaching -- appears to be addressed sufficiently in the Institute's induction or orientation program for newly recruited instructors. Thereafter, the program emphasis is to help individuals without university degrees to pursue degree programs. However, most degree programs pursued by the staff are in Faculties of Education rather than in the technical fields which can improve the competence of the staff in their subject areas. As a result, the staff development program at NAIT does not appear to match fully the goals of the Institute, that is, the teaching of technical skills.

Based on the findings of the study, it was concluded that, despite the attention given to staff development at NAIT, some staff members did not participate in development activities for various reasons. The reasons included not being clear about the program objectives and activities; having little opportunity for informal activities; poor timing of some Institute-based

in-service activities; and program activities not being relevant to the needs of some faculty. Another conclusion was that the needs of the individual staff were influenced by their previous education and position in the organization. These factors, in turn, appeared to affect (1) faculty interest; (2) level of participation; and the individual members' perceptions of the characteristics and effectiveness of the staff development program.

In view of the findings of this study it was suggested that it was essential and beneficial to develop a more comprehensive definition of staff development to help the organization address its needs fully. While such a definition must provide a direction for the objectives and types of activities to use, it must also take into account the following factors: general technological changes; the rate of staff turnover in the organization; the differences in the needs of the individuals and constituencies within the organization; and the need for career development for the members of the organization. In order to cover all the factors, staff development must be viewed from two perspectives -- to develop both organizational and individual competence.

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Chapter I

INTRODUCTION AND STATEMENT OF THE PROBLEM

A. Introduction

Educators and administrators acknowledge the importance of staff development and in-service activities in their efforts to improve the effectiveness of educational organizations. Reporting a project conducted by the Centre for Educational Research and Innovation at the Organization for Economic Co-operation and Development (OECD), Bolam (1982a:10) noted:

> The (interim) report showed that there was broad agreement in Member countries that INSET (in-service education and training) could and should make an important contribution to the resolution of problems associated with several contemporary, major task areas in education.

Konrad (1983:14) observed that the heightened interest in faculty development "relates not only to the quest for personal excellence, but also to factors external to the professoriate." According to Cameron (1984:141), the postindustrial environment of institutions of higher education is characterized by more and increasing knowledge, complexity and turbulence. Among the factors that have been cited for the increasing interest in faculty development are (1) decrease in faculty mobility; (2) declining economic-budgetary circumstances; (3) declining public confidence in the education system; and (4) societal pressure on public institutions to become accountable (Toombs, 1975:701; Centra, 1978:188; Boyd, 1983:1).

Based on the experience of the past twenty years some attempts have been made to conceptualize staff development (Gaff, 1975; Toombs, 1975; Berquist and Phillips, 1975; Collin, 1977; Bolam, 1982a; Pansegrau, 1983). Despite these attempts, the literature seems to suggest there is a lack of agreement about the nature of staff development programs and on what constitutes an effective program (Lawrence, 1974; McLaughlin and Marsh, 1978; Harris, 1980; Pansegrau, 1983).

The various factors that account for the lack of agreement may be classified into three broad categories. First, empirical studies that have investigated effectiveness of staff development programs are inadequate to provide complete explanations and directions. For example, Centra (1978:152) noted that "the Gaff and Berquist-Phillips models are for the most part heuristic rather than empirical." Hence, he questioned whether the concepts proposed by these theorists are accurate and adequate reflections of faculty development in all institutions or whether other ways must be sought to categorize the developmental activities.

Second, there is usually lack of agreement among the different constituencies that are involved in the staff development program on what criteria are to be used in the assessment and evaluation of effectiveness (MacLean, 1974; Joyce, 1976; O'Connell, 1983). Third, a conceptual problem seems to exist concerning the purpose of staff development. That is, the conceptualization of what staff development is, is lacking (Lieberman, 1978:1). For example, whether the emphasis must become system centered or must be oriented toward the individual staff members is an issue that is reflected in different perspectives in staff development and educational administration (Bolam, 1982a; Greenfield, 1985). However, research on adult socialization and organizational change tends to suggest that either one of the staff development orientations is inadequate. Bolam (1982a:69) observes that "it must be acknowledged that the distinction between individual and system need is a simplistic one." Thus, Schiffer (1978:7) and Glickman (1980:178) advocate that the two conceptual purposes of staff development -- meeting systemic goals and satisfying individual needs -- must be complementary to one another.

The need to reconcile the two perspectives of staff development is especially important in technical and vocational educational institutions. In the first place, technical institutions tend to be complex organizations. Complexity, in this context, is defined by Cameron's (1984:133) three dimensions : numerosity, specialization and diversity, and interdependence. Hence, in the staff development efforts, as suggested by Collin (1977:173), the emphasis on meeting the goals of the organization tends to be the priority of administrators in the

organizations of technical education.

Another reason is that the differences that exist among the academic staff of technical educational institutions, in terms of educational and skill levels, are far greater (as measured by the range and variety of degrees and training) than the differences to be encountered among the academic staff of liberal arts colleges and universities. For instance, Chesley (1983:62A) reported that "the realization that the community college faculty is not a psychologically homogeneous group should benefit those responsible for faculty development." Consequently, meeting the individual staff member's need would be an equally important consideration to both faculty and administrators. In this connection, Adkins (1983) showed in a study of four institutions of higher education that from 1972 to 1982, there has been an increase in the number of contracts containing faculty development benefits.

Finally, technical educational institutions normally do not consider a qualification in teaching as a prerequisite for the employment of instructors. This is true for the Northern Alberta Institute of Technology (NAIT) (Konrad, 1973; Collin, 1977; NAIT: A Profile, 1984). As a result, there exists a great variation in the professional skills and the teaching styles among the instructors. Within this context, NAIT has in place a staff development program for the academic staff which is aimed at improving the performance of individual instructors on the job as well as to meet the requirements of the organization. In view of the above stated reasons, one objective of this study is to describe the rationale and characteristics of the staff development program for the academic staff of NAIT.

Schiffer (1978:8) notes that studies have found that change in educational organizations does not follow the rational model. Instead, implementation and continuation of change is dependent upon behavioral and attitudinal change on the part of both teachers and administrators. Doll (1983:31) also observes that the success of attempts at staff development depends heavily on participation by teachers. Hence, this study also aims to examine the academic staff perceptions of the activities and practices that constitute the staff development program at NAIT.

The very complexity of the concept tends to indicate that no single factor or variable can be found as the answer to a successful staff development program. The many variables that affect its implementation include policies, goals, funding, types of activities, changes in the educational environment and the role played by the various constituencies in the organization.

For example, Berman and McLaughlin (1978:22) argue that the fate of staff development, like most innovations, depends "on the complex interplay among the characteristics of the innovative project itself and the institutional setting it seeks to change." Behn (1983:117) also notes that crises in the socio-political environment create both problems and opportunities for public organizations to rethink their organizational strategy. Therefore, this study seeks, in addition, to find out which of these internal and external factors or variables of the staff development program at NAIT seem to have systematic and significant effect on effectiveness of the program.

B. Background of the Study

The Northern Alberta Institute of Technology (NAIT) is a public, postsecondary, non-university educational institution which offers career-oriented training to adults. Adults in this context include persons:

a. who have completed their secondary school education (that is, grade 12 in Alberta at an age of approximately 18 years) or equivalent;

b. who, although not having completed the secondary school education, are not served by the secondary school system and have been out of the regular secondary school system for more than one year; and

c. who have not completed their secondary school education but have obtained the prerequisites identified for particular courses or programs at NAIT. (NAIT : A Profile, 1984:2)

Establishment, Governance and Facilities

NAIT was established in 1962 in response to the Federal-Provincial Technical and Vocational Training Assistance Act of 1960. Hence from the time of its establishment and until March 31, 1982, NAIT was a "line operation of the Alberta Department of Advanced Education and Manpower, with the Institute President being directly responsible to the Deputy Minister of that Department" (NAIT:A Profile, 1984:3).

The new Alberta Technical Institutes Act of 1981, however, provided for a Board of Governors for each technical institute in Alberta. As a result, effective April 1, 1982, NAIT was placed under the authority of a 16-member Board of Governors.

The main campus of NAIT covers an area exceeding 150,000 square metres. In addition, there are five "satellite operations within urban Edmonton" which together cover another 14,000 square metres. For the 1984-85 academic year, the Institute employed a total staff of over 1300 (academic and support staff) with a budget in excess of 74 million dollars of which more than 83 percent was acquired as grants from the Government of Alberta (NAIT : A Profile, 1984).

Organization and Staffing

The President of NAIT is assisted by three Vice-Presidents who are responsible respectively for the three administrative sectors of the Institute, namely, (1) finance and administration; (2) educational support services; and (3) instruction. As shown in Figure 1.1, the three Vice-Presidents together have under their supervision a total of twelve administrative divisions headed by five Deans, six Directors and a Registrar. There is a Dean of student services. The remaining four deans are the administrative heads of the four instructional divisions namely, the Business and Applied Arts, Industrial, Engineering Technology and Continuing Education. Within these instructional divisions, there are department chairmen and program heads who perform mainly supervisory functions.

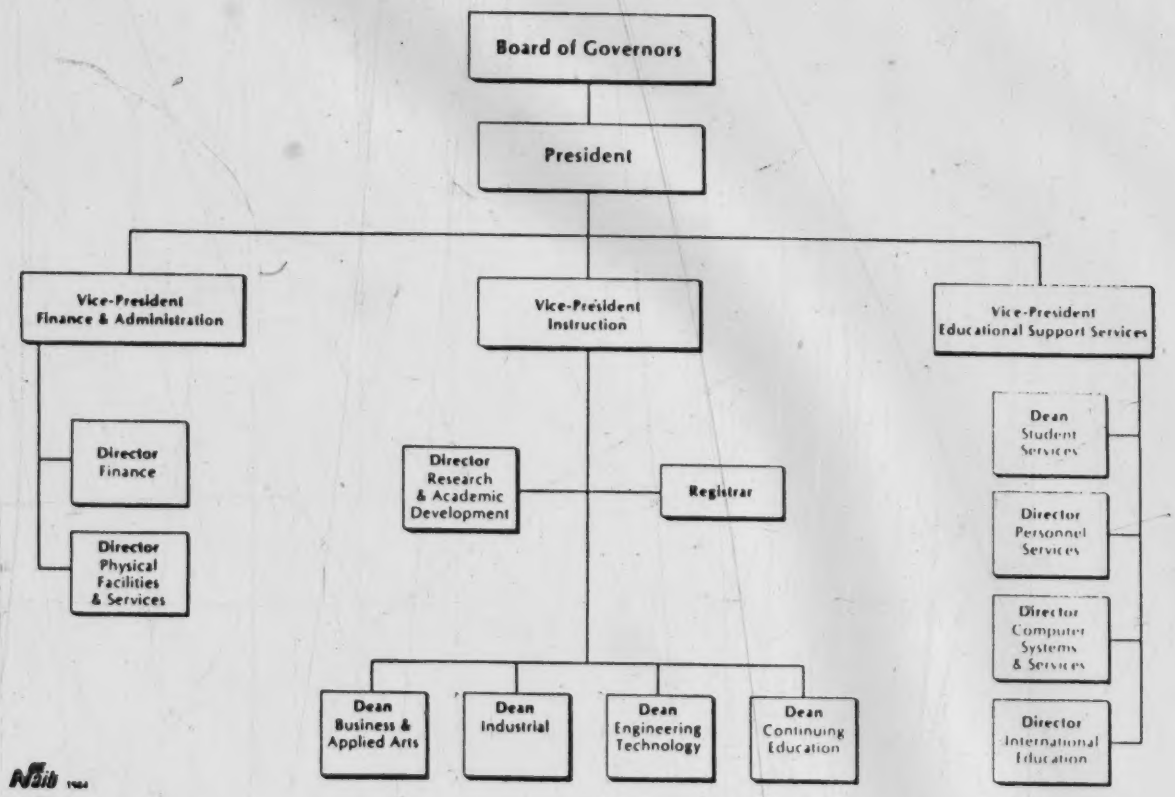

Figure 1.1

Organizational Chart of NAIT

The six Directors are responsible for the following functions at the Institute : (1) finance, (2) physical facilities and services, (3) personnel services, (4) computing systems and service, (5) international education and (6) research and academic development (NAIT-Calendar, 1984-85; NAIT in Perspective, September, 1984).

For the 1984-85 academic year, the Institute's employee total consisted of 509 support staff, 761 academic and supervisory staff, and 70 managerial staff. Generally, the employment qualifications of the academic staff are based on "subject matter or technical expertise and relevant experience in the world of work." Consequently, teaching qualifications and experience are "viewed as an asset rather than a pre-requisite for instruction at the Institute" (NAIT: A Profile, 1984:6).

Programs and Enrolment

The delivery of all programs of the Institute is a direct responsibility of the Vice-President, Instruction. The Vice-President, in turn, delegates the responsibility to four Deans and a Director. The four instructional divisions headed by the Deans are (1) the Business and Applied Arts Division; (2) the Industrial Division; (3) the Engineering Technology Division; and (4) the Continuing Education Division. These divisions are charged with the responsibilities for conducting the instructional activities of the Institute.

The fifth division, headed by a Director, is the Research and Academic Development Division (READ). The role of this division is to enhance and improve teaching and learning in the institution through various activities such as "program planning, program development, instructional services and operational research" (NAIT: A Profile, 1984:3).

In general, the programs of NAIT may be grouped into three categories:

1. Full-time which involves certificate programs of one academic year duration and diploma programs of two academic years duration;

2. Apprenticeship which involves co-operated programs of "on-the-job" and "institutional" training. NAIT provides the "institutional" training component of six to twelve weeks per year (depending upon the type of trade) for each of the four years of the apprenticeship scheme; and

3. Part-time offerings which involve both credit and non-credit courses as a means of providing continuing education in various areas to the members of the community (NAIT: A Profile,1984:3).

The full-time and the apprenticeship programs are offered through the three principal instructional divisions, namely, the Business and Applied Arts, the Industrial and the Engineering Technology divisions. Among the three divisions are fifteen departments which together provide 63 full-time courses for over 5,000 students and 23 apprenticeship programs for over 8,000 students every year. The career fields of programs offered by NAIT include engineering technology, medical and health sciences technology, business and commerce, applied arts and service-oriented programs. The Institute also offers part-time courses through the Continuing Education Division to more than 23,000 students annually. This division uses the resources of the fifteen departments in the three principal divisions to offer the part-time courses.

Provision for Staff Development at NAIT

Both the administration and the academic staff association of NAIT recognize the importance of staff development in view of the great variation in the backgrounds and qualifications among the members of the academic staff. Also an institution of this size necessarily requires a means to ensure that staff of various departments share some common goals and that they are all, to some extent, committed to the main goals of the institution.

Thus, the Institute has induction and orientation programs for newly recruited instructors. In addition, various in-service programs and activities are organized to help the instructors in their work. On the one hand, the interest and commitment of the management to staff development is expressed in the creation of the position of a Manager, Staff Training and Personnel Development as well as the creation of the Research and Academic Development Division (READ).

On the other hand, the interest of the academic staff in professional development is shown in the collective agreement with the Board of Governors. For example, subsection 25.01

(a) of the 1984 - 86 agreement states:

> Staff development leave shall be defined as any leave of absence, with or without pay, granted to a staff member pursuant to sub-section 25.03(a), for purposes of maintaining or developing knowledge, skills and competencies relative to the achievement of Institute objectives.

The sub-section 25.03(a) referred to also reads:

> Any staff member who occupies a full-time position is eligible for long term staff development leave. Any staff member is eligible for short term staff development leave.

It is evident that, in addition to the normal feedback provided by staff on specific in-service activities, a carefully designed study to examine the staff development efforts at NAIT will be beneficial to both the academic staff and management.

C. The Purpose of the Study

Purposes of the Study

The five main purposes of the study were: (1) to describe the characteristics of the staff development program for the academic staff of NAIT; (2) to determine the program's balance of emphasis between meeting institutional requirements and addressing the needs of individual staff members; (3) to assess the effectiveness of the program as perceived by the academic staff; (4) to determine whether differences exist in the perceptions of the program's effectiveness among the different constituencies within the academic staff; and (5) to explore the relationships between perceived effectiveness and the existence of certain input variables for the staff development program.

Statement of the Problem

The aim of the study was to seek answers to specific questions which together would provide information to address the purposes of the study outlined above. These questions are stated below under the five main purposes of the study.

Purpose 1 : *Characteristics of the Program*

The characteristics of the staff development program of the academic staff of NAIT were described in terms of the variables raised in the following questions:

1. How do the characteristics of the instructional staff affect the staff development program?
   a. which categories of staff tend to show interest in developmental activities?
   b. in what way does the previous education of the staff affect the areas of development and types of activities?
   c. what relationships exist between previous education of the staff and degree of participation in developmental activities?

2. What policies are there to direct and regulate the staff development program?
   a. to what extent do the policies address the needs of the individual staff members?
   b. how do the policies specify benefits and obligations?
   c. how do the policies provide for rewards and incentives?
   d. how effectively are the policies communicated?

3. How is the staff development program financed?
   a. what are the sources of funds for staff development and in-service activities?
   b. how is the cost of staff development shared between individual staff members and the organization?
   c. what are the incentives and benefits for staff participation?
   d. which elements or dimensions may be used to describe the costs of staff development (for example, leave, time off, fees)?

4. Which approaches and strategies are used to implement the objectives of staff development at the Institute?
   a. who assesses the needs and determines the objectives for staff development?

b. which projects and activities are used to promote the goals and objectives of the program?

c. when and where do the activities for staff development take place?

d. who coordinates these activities?

e. to what extent does the Institute use the expertise of the staff in implementing the staff development program?

f. what role do the universities play in the Institute's staff development program?

g. what role do industry and business play in the staff development program?

Purpose 2 : *Orientation of the Program Objectives*

Problem: To what extent is the program achieving a balance between meeting the Institute's requirements and addressing the individual staff member's needs as reflected in (1) purpose of program; (2) management control; and (3) types of activities?

Purpose 3 : *Perceptions of Program Effectiveness*

Problems :

1. To what extent are the objectives of the staff development program clear to the members of the academic staff?

2. To what extent is the program addressing matters of needs identification in terms of the strategies used and the participation of staff members?

3. To what extent is the staff development program promoted by the managerial practices of the Institute as measured on the following dimensions: (a) definition of goals and objectives, (b) availability of resources and (c) leadership and flexibility?

4. To what extent is the staff development program promoted by a favourable organizational climate as described by the following parameters: (a) attachment to constituencies, (b) decision structure, (c) commitment to Institute goals, and (d) reward and incentive?

5. To what extent do the members of staff regard the various in-service activities to be relevant and useful to the individuals and to the Institute as a whole?

6. To what extent is the staff development program achieving its objectives as perceived by the staff in meeting (a) the requirements of the organization and (b) addressing the needs of the individuals?

7. To what extent do the members of the academic staff associate the staff development efforts with the following organizational outcomes:

a. improved learning among the students of the Institute;

b. increased instructors' knowledge and skills related to their work;

c. improved interactions among the members of staff;

d. promoted uniform practices among departments and individuals;

e. promoted continuity of accepted practices in the organization;

f. improved professional status of the individual instructors; and

g. sustained innovation and staff renewal in the Institute?

8. To what extent have the provisions and implementation of the staff development program been influenced by the following environmental factors:

a. enrolment changes;

b. changes in the Institute's programs;

c. changes in the field of technology; and

d. links with industries, businesses and other organizations?

Purpose 4 : ***Differences in Perceptions of Program Effectiveness***

Problem : To what extent are there differences in the perceptions of program effectiveness among the different groups (divisions and positions) of the instructional staff?

Purpose 5 : ***Exploration of Relationship Between Variables***

Problem : What is the relationship between program effectiveness and the following input variables:

a. clarity of goals and objectives;

b. availability of resources;

c. types of activities;

d. managerial practices; and

e. organizational climate?

D. Significance of the Study

The significance of the study is discussed from three perspectives: (1) theoretical significance, (2) practical significance, and (3) relevance to personnel preparation.

Theoretical Significance

Both teachers and administrators believe that effective staff development could improve the quality of education for students. But there exists little by way of substantive knowledge and understanding about what kinds of provision work best. Bolam (1982a:71) attested to this fact from a project involving the OECD member countries. He reported :

> Perhaps the first and most important conclusion to be drawn from the impressive survey of practices and research contributed to the project by Member countries is that far from enough is generally known about effective in-service and effective school improvement. Contemporary economic pressure should not be allowed to obscure this simple fact.

Hence arguing for more research and development in the field, Bolam continued:

> In particular, it is clear that the burgeoning interest and activity in INSET is, to a worrying extent, built upon an act of fate. Expenditure on research into INSET has been minimal, so it is hardly surprising that we have so little systematic and reliable information about costs, resource use, and effectiveness. (Bolam, 1982a:71)

Conceptualization. Lieberman (1978:1) argues that what we lack in our understanding of staff development efforts is a broad-based perspective and conceptualization that allows an institution to mount a comprehensive program. This assertion is supported by Bate and McIntosh (1972), Collin (1977), Cruickshank et al (1979), and Pansegrau (1983). On the one hand, Bate and McIntosh (1972:29) suggest that there seems to be a lack of philosophical rationale. O'Connell (1983:662) also argues that policies tend to be fragmented because differences of opinion seem to prevail concerning the importance of the degree of integration of faculty development programs into a college's evaluation and rewards system. He writes:

> Contradictory opinions now exist regarding which policies for evaluating and rewarding teaching improvement produce the best results in terms of both faculty participation in faculty development programs and in changed teaching behavior of participants.

As a result, these differences in opinion have become serious concerns of administrators in

recent times. These concerns of educational administrators are necessary at the time when faculty associations have increased their bargaining power in the area of faculty development contracts and benefits (Adkins, 1983).

On the other hand, a number of models for organizing staff development activities have been suggested in recent years by some scholars. Berquist and Phillips (1975:178) who proposed one of the first comprehensive models for the analysis of staff development observed that "past approaches to improve teaching and learning have, in isolation, fallen short of meeting the challenges posed by the drastic changes taking place" in institutions of higher education. Consequently, this state of the field suggests the need to develop a broad-based conceptual definition of staff development through theoretical and empirical studies. It is in this direction that this study is considered to be significant since it seeks to examine the rationale and the characteristics of the whole staff development program for the academic staff of NAIT.

Specific to technical education. The second point is that while a great deal of literature exists on staff development in general, the literature on staff development for the personnel of community colleges is somewhat meagre. The literature in this field becomes more sparse when the focus is specifically on technical educational institutions. Yet evidence tends to indicate that, in general, requirements and approaches for staff development differ for teachers in different organizations and at different educational levels (Bate and McIntosh, 1972; Berman and McLaughlin, 1978). For example, Berman and McLaughlin (1978:32) observed from the Rand study that whereas the background of the institution seemed to matter less for project outcomes, two factors appeared important. They were (1) the level of programs offered by the institution; and (2) the attributes of the teaching staff. The researchers concluded that change was comparatively harder to obtain and continue at higher educational levels because the teachers at these levels tended to be subject-oriented in contrast to the child-oriented teachers at the institutions that handle younger students.

While little empirical evidence seems to exist in the form of comparison between different educational organizations in the requirements for staff development, Bate and McIntosh (1972:17-19) argue that a staff development program in a community college differs in many and significant respects from programs offered by other kinds of educational institutions, such as schools and universities for two main reasons. One is that the term community college implies different relationships between the clients and the members of the organization. The other is that community colleges have two curricula: an explicit or job related and an implicit curriculum that involves learning the social roles and skills. In a similar manner, the characteristics of technical educational institutions suggest that the staff development needs of such institutions would be different from other community colleges whose programs tend to emphasize academic and university transfer programs. Collin (1977) reported some differences in the staff development needs and the mode of operation between Grant McEwan College and Mount Royal College in Alberta, even though the two colleges tended to have similarities in their purposes and programs. He explained the differences in terms of the differences in the age of the institutions, size of the institutions, and the types of programs they offered. Weleschuk (1977:69) also found that the faculty in Alberta technical colleges held significantly different perceptions on many of the needs and aims of instructor development than the faculty in Alberta agricultural and community colleges.

Smith and others (1982) reported one inconclusive study in this area. They found no significant differences between the perceptions of secondary and postsecondary vocational teachers with regard to the reliability, the concurrent validity and the relative costs of the instruments used in the assessment of their staff development needs. However, significant differences were found between the perceptions of the secondary and postsecondary vocational teachers regarding the content validity of the instruments.

The above evidence seems to suggest that the perceived relevance of the in-service activities to the teachers' job responsibilities is important. Thus as Bolam (1982a:55) suggests, the line of contemporary thinking advocates that "INSET research should be more context

specific." Therefore, this study will also contribute to research on the subject of institution-focused staff development in general and, in particular, to research on staff development in technical educational institutions.

Practical Significance

Staff improvement. Barth (1981:145) observes that educational organizations are being "staffed more and more with veteran, tenured personnel who have little horizontal or vertical mobility" because of the state of the economy. This suggests that staff renewal programs are required for the relatively stable teaching staff that is growing in educational institutions. The Northern Alberta Institute of Technology is no exception in this respect. The annual rate of academic staff turnover at NAIT is between three and eight percent. At the same time over 50 percent of the academic staff have more than five years of service (NAIT: A Profile, 1984). These conditions demand that staff development must attract the attention of administrators of the Institute.

Another reason that makes this study important for NAIT is that, like many other institutions of higher education, NAIT does not insist on pre-service preparation in education for the employment of instructors (NAIT: A Profile, 1984). Consequently, as noted by Prachongchit (1984:24), some instructors at NAIT "need effective faculty development programs in order to help them acquire and maintain knowledge, skills and attitudes necessary to compensate" for the lack of or inadequate pre-service preparation.

Data for planning. Walker and Chaiken (1982:148) observe that during a period of fiscal contraction the inclination of the bureaucrats to maintain "the status quo" in the budget reductions is to make cuts that are largely invisible to the public. And generally these cuts tend to be in areas that are needed to promote innovations. For example, they found that a response by local governments to "Proposition 13 was to reduce expenditures on planning and research activities, postpone the development of management information systems, and more generally, shun all innovative approaches to management that have high front-end costs."

Similarly, Case (1981:114) and Konrad (1983:25) observe that within educational organizations the staff development program appears to be one sector that readily receives budget cuts in the period of economic restraints because the effects are difficult to prove. Case (1981:117) argues that public debates about the value of in-service education tend to focus on tangible and measurable effects and rarely touch on more important effects, such as human relations and commitment to organizational goals. Killan and others (1980:223) also suggest that in order to increase awareness and to improve perceptions of staff development, educators and administrators need to convince politicians and policy makers of its importance. They can do this more effectively when their arguments are based on hard data from empirical studies. This study is intended to contribute to such empirical data for NAIT.

Management and decline. The literature on management of decline in education seems to be growing (Whetten, 1981; Behn, 1983; Boyd, 1983; Cameron, 1984). Boyd (1983:8) observes that while growth can be managed on an *ad hoc* basis without grave peril, retrenchment cannot. He continues :

> Whereas growth and prosperity often foster an emphasis on quality and equality in the provision of educational services, decline and austerity usually shift the emphasis to quality and efficiency. Concern for efficiency and effectiveness generally lead to pressure for greater accountability and centralization of control over education. (Boyd, 1983:21)

Thus, the effect of decline in educational organizations requires fundamental rethinking of educational policy and management. For example, Whetten (1981:88) notes that one of the most difficult challenges for a declining organization is to discourage the exit of its most qualified human resources. Behn (1983:109) also states that while decline in education presents crises, it also presents an opportunity to manage. Thus management can use the change circumstances to redefine the objectives and performance of organizations. And this they can do efficiently and effectively when adequate data exist to guide their decisions and actions. It is in this regard that this study, which examines the academic staff perceptions of the staff development program at NAIT, becomes important.

Adaptation. Cameron (1984:123) states that institutions of higher education need to be concerned with organizational adaptation in order to live to the expectations of the present postindustrial society. He differentiates between organizational adaptation and planned change. Planned change or organizational development, he argues, focuses on changes motivated from within the organization and, therefore, the emphasis is on the process of bringing about the change. In contrast, organizational adaptation deals with the understanding of conditions and sources of change in order that the organization can respond to the changing demands of its environment. Hence a study of this nature would provide data for better understanding and planning of staff development at NAIT that would likely promote institutional adaptation with the changing environment. As noted by Nadler (1980:73), "a good deal of theory and research indicates that information in general and feedback in particular can have significant and profound effects on individual behavior, the functioning of groups, and the capacity of the total system to be adaptive." Thus, this study was intended to contribute toward such information and feedback to the management at NAIT.

Relevance to the Preparation of Educational Personnel

Harris (1980:23) describes staff development as an umbrella term that may include manpower planning, career development, selection recruitment and productive evaluation. Within this conceptual definition, staff development in educational organizations is not only the concern of policy makers and administrators, but also the concern of educational institutions that are charged with the responsibility for the preparation of educational personnel -- that is, colleges of education and universities. The declining enrolment in education is likely to show two main effects in colleges of education and universities: (1) a reduction in the enrolment of pre-service education of teachers and (2) an increase in the institution-focused in-service activities to develop new roles and skills.

Role of colleges of education. Two implications of the above-stated effects of declining enrolment seem relevant for colleges of education and universities. One is that educators of

educational personnel would have to search for alternative approaches for dealing with decline in educational organizations and to provide the necessary advice and assistance on staff development and administrative response to decline in education. The other is that colleges of education and universities might be required to provide education and training programs to staff development officers and in-service education organizers.

Bailey and Braithwaite (1980:209), Bany and Carbno (1981:70) and Donald (1978:46) concluded from separate studies that the in-service activities preferred by teachers, such as activities pertaining to the realities of the classrooms, individual projects, and course planning, were not usually the ones in which they engaged. These findings would suggest that the traditional approach to staff development that is based on the "deficit model" is inadequate. The transmission of knowledge and the development of skills are necessary, but they only form a part of the whole staff development program. Thus, new approaches to staff development which would increase both the interest and participation of staff in development activities must be sought.

Cooperation. The ultimate aim of staff development is to improve teaching effectiveness and this is likely to be achieved when in-service activities are close to the scene of action, the classroom. In this respect, the institutions for the preparation and development of educational personnel need to search for new roles and new approaches to promote the concept of institution-focused in-service activities. The mastery learning approach is of primary importance in technical educational institutions and could be expected to have relevance in staff development programs. As suggested by Boyd (1983:23), the mastery learning approach demands a "move from a role-based to a goal-based approach to institution management . . . (and) this will require a dramatic change in the present allocation of time and effort in both the preparation and practice of educational personnel."

The above argument seems to suggest the importance of partnerships or cooperative efforts among various educational organizations in the attempt to search for and develop effective approaches to staff development. Therefore, all types of educational institutions,

especially institutions of higher education, must be willing to undergo an adaptation process themselves and to implement significant changes in their structures to accommodate other educational personnel as effective partners. Such changes can be most effectively promoted through research, such as this study, that focuses on the characteristics of staff development at a particular institution.

E. Definition of Terms

The terms with specific meanings in this study are defined below.

Planned Change

The term implies a developmental effort or program in which goals are rationally selected and actions controlled to assure change at reasonable rates and with minimum negative effects (Harris, 1980:15).

Educational Change

In this study the term educational change refers to a planned change which involves individuals and institutional development to the degree that the individuals within the educational institution understand and contribute to the adoption of programs as well as to the achievement of mutually accepted goals.

Pre-Service Education

This term refers to a formal program provided by a college of education or university as an introduction to the professional preparation of the teacher (Harris, 1980:15).

Induction/Orientation Program

The term is used to refer to a planned program of a short duration provided to initiate and to assist individuals entering an organization so that they may settle quickly and satisfactorily into the organizational structure. The beneficiaries include both probationaries (beginning teachers) and veterans transferring into new institutions or new positions.

In-Service Education/Activities

In this study, the term is used to refer to the education, training activities or any planned program of learning opportunities afforded staff members of an organization, and intended mainly or exclusively, to improve their professional knowledge, skills and attitudes in order that they can perform effectively in already assigned positions (Henderson, 1979; Harris, 1980; Bolam, 1982b).

Institution-Focused In-Service

This term is used in this study to refer to those "continuing education activities which focus upon the interest, needs and problems directly related to one's role and responsibilities" in a specific institution (Bolam, 1982a).

Staff / Faculty Development

In this study the term staff development, faculty development or professional development (used interchangeably) refers to an organized effort or program intended (1) to foster personal and professional development of individuals within an organization and (2) to create a conducive organizational climate in which individuals enliven and continuously improve the performance of the organization. Thus, staff development is an institutional response to the developmental needs of both the individuals and the organization.

Organizational Effectiveness

In this study, Steers'(1977:5) definition of organizational effectiveness is adopted as "an organization's capacity to acquire and utilize its scarce and valued resources as expeditiously as possible in the pursuit of its operative and operational goals."

Postsecondary Education

This study adopts the UNESCO's (1976) definition of postsecondary education. It refers to "the entire body of organized educational process that enables adults to develop their abilities, enrich their knowledge, improve their vocational competence, or enhance their lives."

Technical Educational Institution

This term is used in this study to refer to a non-university, postsecondary educational establishment whose purpose is to relate training to specific occupational goals. Thus, while such an institution may occasionally offer upgrading courses in the academic subjects and leisure education, the main orientation is in the career-oriented training areas such as engineering, business, food technology and health science.

Career-Oriented Training

The term refers to training designed toward a specific occupation in industry and commerce and which helps individuals to fulfil their personal, social and vocational aspirations (NAIT: A Profile, 1983).

Academic Staff Member/ Instructional Staff of NAIT

An academic staff member of NAIT, as used in this study, refers to a person employed by the Board of Governors of NAIT and who serves in any one of the following capacities : (1) instructor, (2) senior instructor, (3) program head, or (4) department chairman (Academic Staff Collective Agreement of NAIT, 1984-6).

Instructional Supervisory Staff of NAIT

The term instructional supervisory staff of NAIT, as used in this study, refers to the academic staff members who hold any one of the following appointments at NAIT: (1) program head, (2) assistant program head, and (3) senior instructor.

Managerial Staff of NAIT

In this study, the term managerial staff of NAIT, is used to refer to 70 senior personnel in the following staff positions: (1) the President, (2) the three Vice-Presidents, (3) the five Deans (4) the six Directors, (5) the Registrar, (6) the fifteen department chairmen, and (7) other sectional heads of the supporting services including finance operation, personnel development, physical facilities, student counselling, student placement, and learning resources (NAIT: A Profile, 1984:6).

F. Delimitations and Limitations of the Study

Delimitations

This study is delimited to the following:

1. the staff development program for the academic or instructional staff of the Northern Alberta Institute of Technology (NAIT);

2. the responses given to the survey questionnaires by the instructional staff at NAIT and information obtained from the Manager, Staff Training and Personnel Development and the Director of Research and Academic Development at NAIT; and

3. the data gathered from official documents on staff development at NAIT.

Limitations

The three main limitations to the study are :

1. the lack of a universal conceptual definition of the term staff development. Therefore, there is the problem of what exactly constitutes the important elements and dimensions for describing a staff development program.

2. the lack of a universal definition of organizational effectiveness in the literature. Consequently, a difficulty exists in the agreement on what dimensions and criteria are to be used in the assessment of organizational effectiveness. Similarly, there are perceptual differences among the members of an organization regarding what is an effective staff development program.

3. the usual difficulty of recording true opinions and impressions through the use of questionnaires. As argued by Haller (1979) and Pansegrau (1983), a questionnaire consists of preconceived assumptions imposed on the subjects by the investigator. As a result, the subjects are prevented from formulating by themselves the intentions and perceptions to be ascertained.

G. Organization of the Thesis

This first Chapter has presented the background of the study, the main research problem and the significance of the study. In addition, definitions of terms, limitations and delimitations of the study are stated.

In Chapter II, related studies in the field are reviewed to examine staff development policies, training components and effectiveness.

Chapter III provides an overview of the perspectives used by various researchers to describe staff development. In addition, the conceptual basis for the study is presented.

The research methodology is described in Chapter IV. The population, the selection of the sample, the data collection procedure and the treatment of the data are outlined.

In Chapter V, the staff development program at NAIT is described as perceived by the academic staff in terms of staff characteristics, participation, activities and program orientation.

Chapter VI provides an assessment of the staff perceptions regarding the effectiveness of the staff development program at NAIT using selected dimensions.

The summary, conclusions and implications of the study are presented in Chapter VII.

Chapter II

REVIEW OF RELATED STUDIES

The literature on in-service education and staff development is vast and still growing rapidly. Nevertheless, three main problems seem to characterize the writing in this field. First, as Henderson (1978:9) observed, much of it is widely scattered and some largely inaccessible because it is unpublished. Second, Mazzarella (1980:182) noted that a majority of the publications tend to be evaluation reports rather than empirical research. The former tend to be subjective opinions regarding the success of seminars, workshops, and other activities. The latter involve a systematic form of inquiry designed to answer questions or to expand knowledge. Thus Mazzarella observed :

> In many of them, administrators or teachers write up a program used in their schools. It is almost always a successful program since no one likes to publish failures. Measurement techniques are often subjective opinions . . . . Control groups are rarely used because no one wants to be left out of the existing new program.

Third, Nicholson et al. (1976:4) and Cruickshank et al. (1979:27) noted that there are methodological and reporting problems with the relatively little empirical research in the field. In the area of technical education, an additional problem is the scarcity of studies and evaluation reports. Many of the studies examined were aimed at community colleges in general and most of them appeared to deal with needs assessment and surveys of staff development practices.

In view of the above-listed problems, the literature review is presented so as to cover mostly empirical studies in those areas that relate to the main purpose of this study. The areas covered are (1) issues of policies and finance of staff development; (2) management and decision-making arrangement for implementation; (3) components and activities for staff development; (4) organizational effectiveness and successful staff development; and (5) unique aspects of the organization of technical education.

A. Policies and Finance Issues

In this part of the literature review, policy formulation, cost and method for financing staff development are examined. Policies are examined in terms of existence, nature and directions. Finance is considered with regard to the source of funds and provisions for rewards and incentives.

Policy Formulation

Konrad (1973:47) suggests that staff development "should be an essential component of the personnel policy in every educational institution, particularly in the community college with its avowed commitment to teaching." According to Bolam (1982a:60-67), while most studies had focused on technical and operational aspects of staff development, both administrators and researchers recognize that staff development operates within a political context.

Other writers maintain that policy making and conflict management in a period of decline differ significantly from their characteristics under growth conditions. Boyd (1983:7) argues that resource allocation decisions tend to become far more difficult in decline than under growth conditions. Hence, within the various political and economic constraints on educational organizations, the following three topics are examined: existence of policies; nature of existing policies; and new directions for staff development policies.

Existence of policies. Some studies indicate that institutions of higher education lack coherent and uniform policies on staff development. Centra (1978b:160) concluded from a survey of postsecondary institutions in the United States that while 65 percent of the universities had a unit or person designated to coordinate faculty development activities, only 49 percent of the two-year colleges had such arrangements or policies. Konrad (1983:24), reporting a survey of faculty development practices in Canadian universities, found that 60 percent of the universities had an organized program and of these only two-thirds, or 40 percent of the total, had a unit or person for coordinating faculty development activities. In

addition, most of the coordinators served on a part-time basis. Henderson (1978:27) also found a lack of clear and coherent policies on staff development and concluded that little effort has been made to evaluate its impact.

The above evidence suggests that, in the past, policies on staff development have not received the attention they deserve in the institutions of higher education. However, both Collin (1977:140) and Adkins (1983) reported that the situation seemed to be improving as indicated by the increased attention given to staff development issues in the collective bargaining agreements. For example, faculty development provisions in the 1982 contract agreements had not only increased in the institutions of higher education, but were also more explicit than in the 1972 agreements (Adkins, 1983:24A).

Nature of existing policies. Policies on staff development address many issues including definition of goals, faculty participation and program funding. Bailey and Braithwaite (1980:203-13) found the relationship between staff development program and educational change to be weak because the program lacked coordination and clearly defined goals. According to Adkins (1983), an examination of faculty development contracts in four institutions of higher education revealed the following as regular components of the contracts : (a) compensation; (b) activities permitted; (c) eligibility; (d) duration; (e) administration of benefits; (f) application process; (g) rationale for selection; (h) recipient obligation; (i) number of recipients; and (j) other income sources.

O'Connell (1983:670) concluded from a study involving a number of the liberal arts colleges in the United States, that the " colleges' evaluation and reward policies were not related to the degree of faculty participation in staff development activities nor to the degree of changed teaching behavior." O'Connell (p. 673), however, warned that the findings did not imply that policies were unimportant. Instead, the findings seemed to suggest that a complex set of factors, including inner motivations, contributed to both effectiveness and faculty participation in staff development.

Policy directions. Many collective agreements in the institutions of higher education now contain faculty development contracts and provisions (Adkins, 1983; Bailey, 1983; Marker, 1980). Such recent policies attempt to address issues of cost sharing, rewards, study leave and rationale for selection. Nelson and Siegel (1980:3), reporting the evaluation of the Association of American Colleges Project, stated that funding from external sources was another important factor to be considered in policy formulation because such support was required for the expansion and increased interest in faculty development.

However, staff development policies are directed not only at monetary issues and extrinsic rewards but at others as well. Konrad (1973:50) reported that the major problems in staff development in the Canadian community colleges included time constraints and staff attitudes. O'Connell (1983:674) advocates policies that highlight intrinsic rewards. He argues:

> If generalization can be made from the findings, less trust ought to be placed on administrative policies that are designed to change or reinforce faculty behavior, especially by means of the incentives of extrinsic reward. Energy might be better invested elsewhere: in creating the kinds of activities, for example, that rely upon the inspiration of faculty members by firmly held values to seek their own professional growth.

Finally, in an OECD project, five issues were identified as matters of importance that required attention in policy formulation for staff development. These were:

1. release and financing of faculty to undertake in-service activities;
2. content and methods of in-service programs and activities;
3. validation of in-service awards;
4. accreditation and certification related to in-service awards; and
5. co-ordination of in-service programs (Bolam, 1982a:46).

Finance and Incentives

Extent and methods of funding are essential for the success of staff development. The finance issues considered below include source of funds, cost sharing, and rewards and incentives.

Source of funds. Bolam (1982a:39) reported four basic patterns for the financing of in-service activities among the OECD member countries. These were (1) central government direct financing that aimed more at new and innovative programs; (2) central government indirect financing through more grants to educational organizations and other agencies; (3) individual teachers contributing their own time and money; and (4) assistance provided by teacher unions and private organizations. The four patterns are considered to be the general trends used to finance in-service education at all levels of educational organizations in the OECD member countries, including schools, colleges and universities.

But other research indicates that institutional budgets are the main source of financial support for staff development in the institutions of higher education in Canada and the United States. Konrad (1983:23) found that the financial support for faculty development in Canadian universities was, in most cases, less than one percent of the total institutional budget. Bate and McIntosh (1972:32) and Schultz (1972:41) reported that financial support of 3 to 5 percent of the colleges' instructional budgets was given to faculty development efforts in the United States. Furthermore, while Konrad reported that only three percent of Canadian universities received funds from external sources for faculty development, other researchers (Centra, 1978a:189 and 1978b:160; Nelson and Siegel, 1980:3; Marker, 1980:10; Bowen, 1980:20; Carlberg, 1980:26) indicated that, in the United States, external funding was particularly influential for the expansion of faculty development in the institutions of higher education.

For instance, Centra (1978b:160) reported that, in the United States, an average of 70 percent of the total budget for development activities came from institutional general funds. Of the remaining 30 percent, grants from foundations or federal government averaged 20 percent, from states 7 percent, and 3 percent from other sources such as alumni. Hence, Centra (1978a:189) remarked that "it is unlikely that the recent expansion in faculty development would have been nearly as spectacular without the support provided by various funding agencies." Thus, as opposed to the findings reported by Bolam as being the common

practices for funding staff development, the institutions of higher education in North America tend to rely more on their own institutional budgets. This may be due to the high demand for autonomy in the governance of such institutions.

Cost sharing. The two elements to consider in cost sharing are (1) resources -- time and money and (2) who makes the contribution -- teachers or employers. Research evidence indicates that more instructors attend in-service activities in their own time than in their employers' time. For example, Bolam (1982a:41) and Baker (1980:181) reported that more than one-half of the faculty involved in the in-service activities in the United Kingdom did so as part of their own professional responsibility and without absence from the normal classroom activities. They also noted that, over a one-year period, only one percent of time-tabled periods were lost for in-service reasons compared with 2.7 percent for staff illness. Konrad (1973:51) summarized the cost sharing for staff development functions in the western Canadian community colleges as follows :

> A perusal of the responses showed that institutions carried the full cost of programs most commonly when the objectives related to orientation and in-service training. Continuing education or professional development costs were shared or carried exclusively by participants about half of the time.

Faculty negotiated benefits is another strategy that is used to share staff development cost in the institutions of postsecondary education. Adkins (1983) found that while sabbatical leave and leave without pay ranked very high (first and second respectively) on the list of negotiated benefits for faculty development, leave with pay ranked relatively low (twelfth) on the list.

Rewards and incentives. After an extensive review of the literature, Lytle (1983:30) questioned the premise for the payment of rewards and incentives to teachers. He noted:

> The literature and research on in-service teacher education strongly suggests that the current practice of paying salary increments as a reward to teachers who obtained graduate degrees and course credits has no logical or empirical justification. This practice is expensive, does not respond to teachers' own expression of training needs and has no demonstrable benefit to students.

Other research evidence about the utility of motivation in staff development efforts indicates that teachers tend to be more concerned about intrinsic rewards than extrinsic rewards (Joyce

and Peek, 1977; McLaughlin and Marsh, 1978:75; Silver, 1982; Lytle, 1983:29; O'Connell,1983). For instance, O'Connell (1983:662) concluded that "faculty are inner-motivated persons whose professional values move them to seek the rewards intrinsic to teaching regardless of the institutional policies." But Morgan (1984:25) argues that rewards could have either undermining or enhancing effects depending on the circumstances. In view of this evidence, O'Connell (1983:674) would not dismiss the use of appropriate external rewards and incentives. He warned:

> Poorly designed systems that, for example, promise no rewards for teaching effectiveness might very well impede faculty effort to improve their teaching. Such a deprivation of external rewards could result in dissatisfaction even though the presence of such rewards does not necessarily create noticeable satisfaction.

According to Adkins (1983), the faculty development benefits that seem to attract attention in faculty collective agreements include (a) sabbatical leave; (b) faculty evaluation; (c) leave without pay; (d) tuition assistance; (e) professional travels; (f) research; (g) professional leave; (h) outside employment; (i) study leave; (j) professional conference attendance assistance; (k) leave with pay; (l) faculty exchange (m) faculty meetings; and (n) discounts on books and supplies. Bailey (1983) also found that the faculty members of a university considered the following as important rewards : tenure, promotion, reduced load, travel money, released time, graduate or student assistant, and free tuition for family. Finally, Marker (1980:13) and Bailey (1983) point out that information about faculty development rewards and incentives must be communicated to faculty so that individuals would be able to take a maximum advantage of these benefits.

Summary

Policy and finance issues concerning staff development were considered to this point. Research indicates that, in the past, policies on staff development have not received the attention they deserve in institutions of postsecondary education. However, the situation seems to be improving in recent years as indicated by the increased attention to staff development issues in the collective bargaining agreements. Because of the involvement of faculty

associations in policy formulation, the issues addressed by the policies relate mostly to staff benefits, such as cost sharing and monetary rewards. But other evidence shows that faculty participation depends, in most cases, on the inner-motivation of the individual members. In this connection, it is necessary that the policies must equally address other issues, such as overall program objectives, activities likely to attract more participants, and matters of non-monetary incentives.

With regard to the source of funds for faculty development, the research literature indicates that most of the financial support was derived directly from the institutional budget. Individual staff members also contributed their time and money. Finally, through external funding was found to be useful, but this source has not been explored adequately.

B. Management and Decision-Making

The previous section discussed issues of policies and finance of staff development. Policies require implementation, hence issues of management and decision-making become crucial. But different ways of conceptualizing policy implementation have led to various suggestions for management strategies. For example, by considering policy as a "tension-generating force in society," Smith (1973:202) views implementation as a process of societal change in which conflict could occur among interest groups. Accordingly, he identifies four components of policy implementation. These are (1) the target groups; (2) the patterns of interaction; (3) the implementing organization; and (4) the environmental factors.

For their part, Edwards and Sharkansky (1978) view the study of policy implementation as a study of bureaucracy, and as such they identify the following five implementation requirements: (1) communication; (2) resources; (3) bureaucratic politics; (4) standard operation procedures; and (5) follow-up. Other writers including Fullan (1972), Sayeed (1973), and Dalin (1975) suggest that implementation must be viewed from two main dimensions: structural and behavioral. Following the above review, the components that are considered to be essential for the implementation of staff development include:

communication; bureaucratic politics; patterns of interaction; and resources. These components are discussed below in terms of two main factors of implementation namely, management strategies and decision-making arrangements.

Management Strategies

Communication and institutional leadership are the main issues of concern regarding management of staff development found in the research literature.

Communication. It is important to communicate the objectives and activities, as well as the policies and regulations governing staff development to faculty members. Marker (1980:13) states that the process for announcing and awarding grants to faculty members for development activities is an important factor in the success of staff development programs. Equally important is the announcement of annual reports on faculty development. Bailey (1983) found that the department chairmen were better informed of the staff development policies, benefits and procedures prescribed in the *Faculty Handbook* than the faculty members. Hence, Siegel (1980:143) argues that, in order to achieve a maximum participation of faculty in development activities, "leaders of the (staff development) program must communicate openly to the rest of the campus the existence of the program, the terms of competition, and the successes and failures of ongoing projects."

Institutional leadership. While teacher commitment and collaborative efforts are essential for successful staff development, the Rand study and other documented evidence indicate that institutional leadership is particularly important for both successful implementation and continuation of the innovation (Joyce, et al., 1976; McLaughlin and Marsh, 1978; Mazzarella, 1980; Nelson, 1980; Siegel, 1980; Campbell, 1983). Reporting an evaluation project, Siegel stated that while the relationship between the success of faculty development and the general institutional management was not significant, there was a significant relationship between the program success and the management and administration of the program. He also found that while the department chairperson had a potentially significant

role to play in faculty development, this role was often neglected. Hence, Siegel (1980:143) concluded that "the management of the program in particular seems to be even more critical for faculty development success than the general management of the institution."

The above evidence and the findings reported by Joyce et al., Nelson and Mazzarella provide a word of caution on the extent of involvement by the institutional leadership in managing staff development. Joyce et al. (1976:xiv) found that only two percent of the instructors in their sample preferred a local person as their trainer and evaluator of in-service activities. Nelson (1980:148) interviewed faculty and administrators and concluded that administrative leadership was especially required in areas where faculty were reluctant to take initiative. In this connection, Mazzarella (1980:183) suggests that the instructors' preference for external consultants appears to highlight the negative attitudes and the threatening situations which are often associated with summative evaluation and job security.

Decision-Making Arrangements

The decision-making arrangements for staff development center on three main issues found in the research literature: (1) centralization versus loose coupling; (2) use of staff development committees and (3) role of staff development coordinators.

Centralization versus loosely coupled systems. Both organizational theorists and researchers agree that the degree of centralization in organizational decision-making depends upon the trade off between control and autonomy. That is, centralization, as a concept, involves a continuum with control at the high end and autonomy at the low end (Hall, 1968; Sousa and Hoy, 1981). In this regard, the concept of loose coupling has been applied to educational organizations, particularly to universities, to indicate a high degree of autonomy or low degree of centralization because of professionalism and academic freedom exercised by university professors (Miskell, et al., 1981; Lutz, 1982; Weick, 1982).

But as noted by Whetten (1981:86), "the structure of educational organizations (also) creates a bias against change" because the "resulting loosely-coupled and the committee-based

structure creates a bias for maintaining status quo in two ways." According to Whetten, first the committee system makes it difficult to discontinue non-beneficial programs because of the influence of interest groups. Second, in an environment of competition for scarce resources, ratification and approval of a new program by a committee becomes problematic.

The above-noted bias has implications for the planning of staff development in educational organizations in general, and for the technical educational organizations in particular. The concept of loose coupling originated from the university organizations, and it is grounded in the assumption that members of university organizations are professionals. Therefore, it has been a long tradition to permit the degree of flexibility and autonomy required to maintain academic freedom. However, the tradition of the development of technical institutes has caused them to use centralized decision-making arrangements to implement staff development. Traditionally, technical educational organizations have been considered as an extension of the governmental-bureaucratic machinery for the development of middle-level manpower. As a result, instructors in technical institutes tend to have less autonomy in their work than university professors. Furthermore, research shows that autonomy is inversely related to bureaucratic practices (Hall, 1968:95; Marsh and Mannari, 1981:41; Nevels, 1984).

Lutz (1982:657) and Weick (1982:676) have cautioned about the limitations of the loose coupling concept. Weick notes that there is a risk of uncertainty and anarchy in loosely coupled systems and, therefore, some form of selective centralization is needed to articulate the common goals of educational organizations. In order to achieve a suitable balance between centralized authority and individual autonomy in the management of staff development, technical educational organizations in particular, and educational organizations in general, have used both staff development committees and coordinators.

Staff development committees. Two main issues associated with staff development committees are the membership of the committee and the role of the committee. According to Collin (1977), staff development committees of the community colleges used to be composed of senior members of staff. But of late faculty associations have become fully involved and so the

committees consist of faculty elected from the ranks of the colleges' divisions.

The reported role of the staff development committees include (1) determination of institutional needs; (2) formulation of policies and aims for staff development; (3) control of funds and award of grants to individual members of faculty for staff development activities; (4) approval of individual members' development plans for funding; and (5) approval of requests for study leave (Collin, 1977; Voelkel, 1980; Carlberg, 1980; Fordham and Ainley, 1980).

Staff development coordinator. In a survey of western Canadian community colleges, Konrad (1973:51) concluded that there is no systematic pattern regarding the role of staff development officer for the smaller colleges (enrolment below one thousand). However, the larger colleges usually had a second-level administrator for coordinating staff development activities.

Bate and McIntosh (1972:30) report the concept of the Educational Development Officer as the new type of college administrator who "has wider responsibilities than those of the in-service officer." The Educational Development Officer is involved in planning and decision-making, institutional research, search for institutional goals and objectives, and academic program development.

Summary

The two important components of management for staff development discussed are communication and institutional leadership. The research suggested that the objectives, benefits and individuals' obligations in the staff development program should be communicated to faculty members. As well the success and failures of ongoing projects should be reported. Concerning leadership, the roles played by both the institutional leader and the person responsible for staff development are important. The institutional leader's support and attitude is crucial because the leader is chiefly responsible for establishing the institutional policies and philosophies as well as being responsible for the acquisition and commitment of funds and

resources for staff development. While the research literature indicates that the program manager is influential in achieving the program objectives, the evidence also shows that there is a lack of systematic pattern regarding the role of such personnel in post secondary educational institutions.

C. Components and Activities

The aim of this section is to identify the important components and activities that are used in the planning and provision of staff development. The focus is on three main areas : (1) the desired goals; (2) education and training concerns; and (3) developmental activities and faculty involvement in the activities.

Desired Goals of Staff Development

A survey of 31 colleges in western Canada by Konrad (1973:48) revealed the following, in order of frequency, as the objectives of staff development: in-service education, professional development, and orientation. Only one institution mentioned organizational development as one of the objectives. Collin (1977:171) found that both Grant MacEwan College and Mount Royal College in Alberta initially emphasized organizational and program needs in their staff development programs.

From his study of Alberta community colleges, Weleschuk (1977:97) reported that both instructors and administrators in Alberta community colleges perceived the highest needs for instructor development to be in the areas of understanding psychology, strategies, individualization, diagnosis, and motivation concerning the adult student. However, the instructors as a group perceived a higher need for instructor development than did their administrators. He also found that faculties in technical colleges tended to perceive a lesser need for instructional development. These findings led Weleschuk (1977:102-106) to conclude that:

1. faculties in Alberta colleges prefer more emphasis on instructional improvement and continuing professional development activities in instructor development programs and that orientation needs were being met or were not necessary in the eyes of the respondents; and

2. instructors' development needs were being met to a greater extent in technical colleges than in community or agricultural colleges.

Education and Training Concerns

The two important concerns associated with the planning and provision of staff development deal with (1) instructors as adult learners, and (2) training strategies.

Instructors as adult learners. Instructors are adult workers; hence, the staff development efforts must recognize the characteristics and needs of the faculty as adult learners. Bolam (1982a:14), quoting Ferry (1979), states that adulthood can be defined in terms of both psychological factors (age and development) and sociological factors (socio-economic factors). From the point of view of the psychological factors, Bolam (1982a:15) argues for the relevance of certain learning theories in the planning of staff development. The relevant theories include those which relate to achievement, mastery learning, creativity, motivation and feedback.

Concerning the sociological factors, attention must be given to the educational needs of a professional which demand not only the learning of techniques and methods, but also the understanding of institutional standards and culture. Thus providing opportunities for staff participation in decisions becomes important. Harris (1980:159) recognizes the important role of adult learning strategies in the planning of staff development, when he notes that "the design of activity sequences and materials for use should provide for some differentiated experience even when common goals, objectives, and needs are being served."

The work of Fuller (1969), and the later adaptation of it by Feiman-Nemser and Floden (1979), provide useful examples where theories of adult learning have been utilized to enhance the understanding of staff development. Feiman-Nemser and Floden identify three phases of concerns for the teacher during his or her teaching career. The early phase deals with

concerns about oneself -- usually non-teaching concerns. The middle phase comprises a teacher's concerns about professional expectations, subject matter proficiency and relationships with students. The late phase includes the teacher's concerns about student learning and the teacher's contribution to student change. The model implies that it is inadequate to utilize the same activities in the staff development efforts for all teachers and at all times.

Hunt et al. (1974) and Bents and Howey (1981) have demonstrated the need to use a variation in activities for staff development. According to Bents and Howey (1981:15), studies have shown that:

> Individuals at more concrete levels of conceptual development function best in more structured environments while those at more abstract levels can function effectively in either high or low structured environments.

In connection with the idea of providing variations in the activities and strategies used with adult learners, Schiffer (1978:10) identifies the effective strategies to include : (1) values clarification (opportunity to discuss educational philosophy with colleagues); (2) focus on interpersonal norms in group work; (3) opportunity to practise new experiences and to receive immediate feedback; and (4) the opportunity to modify aspects of an innovation.

The above evidence is especially important for the planning of staff development in the community colleges as reported by Chesley (1983). He concluded that the findings of his study "successfully challenged the homogeneity of psychological characteristics of the community college faculty."

Elements of training. Joyce and Showers (1980:379; 1983:5) distinguish between two purposes of training: (1) tuning present skills and (2) learning new skills. They argue that the former is easier to achieve because it involves a horizontal transfer of learning. That is, it involves a situation in which there is a direct shift from the training to solve an identical problem. Learning a new skill is more difficult because it involves a vertical transfer of learning; that is, a situation requiring more judgement and adaptation.

Using the above conceptual framework, Joyce and Showers (1980:382) analyzed over 200 studies to examine the different training strategies and their impact on the learning process

in staff development. They identified five major components of training: presentation, demonstration, practice, feedback and coaching for application. The four levels of impact used in the analysis were (1) awareness; (2) acquisition of concepts; (3) learning of principles and skills; and (4) application of skills in problem solving. Joyce and Showers reported the following conclusions:

1. in general, there was "no clear demarcation between fine tuning and new reportoire" in the objectives of the staff development activities in the sample;
2. once an awareness and an adequate skill level had been achieved by teachers through various strategies, practice under simulated conditions became crucial for transferring the skill into the teachers' instructional situations; and
3. for maximum effectiveness, all the five components of training must be used in combination.

McLaughlin and Marsh (1978:76-80) also distinguish between two complementary elements of training: staff training activities and training support activities. The staff training activities include information transfer techniques while the training support activities refer to the assistance teachers receive from other individuals. According to McLaughlin and Marsh, data from the Rand study indicated that staff training activities alone influenced both student gains and project implementation but only in the short-term. In contrast, the staff support activities had a long-term effect on both outcomes and continuation of the skills acquired. In particular, project meetings as elements of support activities were very beneficial and effective because they provided a forum for instructors to learn from one another.

Donald (1978:42-50) reported from a study of the goals and activities of pedagogical services across Canada (involving eighty-seven universities and colleges) that while over half the number of services stated their general goals as improving teaching or professional development, a more indepth examination of the data revealed the following, in order of frequency, as the areas of activity for pedagogical services: (1) provision of information in the form of publication; (2) research and experimentation; and (3) instructional development and evaluation. She concluded that "there appeared to be discrepancies between practice and priorities, and that those practices considered more effective might be given greater emphasis by

the services devoted to teaching improvement" (p. 45). Research activities were cited as examples of effective practices. Donald suggested further that, based on the data of the study, a program to improve teaching must begin with improved course design and instructional procedures, to be followed, in order, by the evaluation of student learning, the evaluation of teaching, and attention to student-teacher interaction.

Development Activities and Faculty Involvement

Since a variety of activities is used to promote the objectives of staff development, some form of classification of the activities is helpful. Research also suggests that the level of faculty involvement is closely related to the type of development activities. The research in these two areas is summarized below.

Staff development activities. Bate and McIntosh (1972), Berquist and Phillips (1975), Toombs (1975), Centra (1978a) and Konrad (1983) have discussed at length the various activities involved in staff development programs. These scholars agree on classifying the various development activities into three broad categories :

a. Personal development activities: (1) workshops; seminars and presentations that explore general trends in education; (2) specialist and personal assistance to the individual staff members; (3) sabbatical and study leave; (4) professional conference; (5) work experience; (6) research projects; and (7) interpersonal skill training;

b. Instructional development activities : (1) training in educational methodology and technology; (2) curriculum development; (3) microteaching; (4) peer evaluation; and (5) student evaluation;

c. Organizational development activities : (1) department decision-making; (2) conflict management; (3) team building; (4) management development; and (5) information communication.

Toombs (1975:707) maintains that the faculty of an institution can be classified into four groups that reflect their career stages as (1) pre-service; (2) new inexperienced; (3) new experienced; and (4) established experienced. As a result, he suggests that the differentiation of activities is essential to meet the needs of the individuals as well as those of faculty groups at various career stages.

Faculty involvement. Participation in faculty development has been examined in terms of the types of activities, areas of specialization, and status of faculty members. Centra (1978a:196) reported that the type of development activities was closely related to the level of faculty involvement. The high involvement activities included workshops, seminars, orientation sessions, and senior faculty working with new teachers. In contrast, what Centra (1978b:156) called the traditional practices, by their nature involved a relatively small number of faculty at any one time. These traditional practices included sabbatical leave, grants for travel, grants for instructional improvement, and visiting-scholar programs.

Examining involvement and the discipline of faculty members, Fordham and Ainley (1980:60) found that the participation in staff development activities by the Australian technical and further education instructors was generally proportionate to their representations, as defined by their areas of specialization. However, two marked exceptions were found in the field of business studies and general studies. In both cases, staff participation was proportionately low.

The relationship between participation and status of faculty members is not clear. From a survey of Canadian universities, Konrad (1983:22) suggested that (1) faculty members most involved in faculty development activities were the good teachers who wanted to get better; and (2) tenured faculty members seemed to be more involved than non-tenured faculty. However, O'Connell (1983:670) reported that the degree of participation in faculty development activities showed no significant relation to faculty's rank, discipline, tenure status, and years of teaching for the teachers of liberal arts colleges in the United States. He also found that the degree of participation was neither related to the reward system nor to the effort for evaluating teaching effectiveness. He attributed his findings to the assumption that "faculty tend to be inner-motivated persons who are influenced more by their own professional values than by pressures from organizational policies" (p.673).

When the above evidence is examined in the context of Barber's (1984) findings, that administrative practices must recognize cultural values, then several factors can be identified as

influencing faculty involvement in development activities. These factors include (1) type of institution; (2) size of institution; (3) organizational structure as measured by the degree of centralization; and (4) educational background of faculty. As noted by O'Connell (1983:673), these must be seen as a complex set of factors whose influence results from the combination of all or some of them. As a result, no one factor could be isolated as the sole contributing influence.

Summary

Three main components that require consideration for the planning of education and training activities of staff development were identified: the desired goals; education and training concerns; and development activities and faculty involvement. The main goals of staff development include instructional development, organizational development and personal development. The recognition of instructors as adult learners implies the need for diversification in the activities used to promote the program objectives. Research indicates that the type of activities is closely related to the level of faculty involvement.

D. Organizational Effectiveness and Successful Staff Development

Underlying the range of purposes of staff development is a potential conflict between the needs of the individual teachers and those of the employing authorities. But Dillon-Peterson (1981:3) notes the interaction between the individual teacher and the environment. She notes:

> The successful teacher is, and will remain, a key to successful learning for students. But the effort of one person -- however diligent -- can be helped or hindered significantly by the environment in which he or she works.

Dillon-Peterson concludes:

> Organizations are successful in fulfilling their mission only to the degree that the individuals within them understand and contribute to the achievement of mutually-accepted goals.

In view of the above suggestion that individual development and organizational performance are interactive, this section addresses two main issues: the analysis of organizational effectiveness and the characteristics of successful staff development.

Analysis of Organizational Effectiveness

In recent years organizational theorists have focused on the topic of organizational effectiveness. Yet no one universal definition of organizational effectiveness is identified (Steers, 1977; Van de Van and Ferry, 1980; Hasenfeld, 1993; Ratsoy, 1983; Cameron and Whetten, 1983), because different writers conceptualize organizations in a variety of ways. Steers (1977:4) suggests that the multidimensional perspective of organizational effectiveness is necessary because organizations by their nature are complex entities. Cameron and Whetten (1983:1) also note that "the lack of specificity of the construct space of effectiveness is not viewed universally as a negative." Instead, the multidimensional approach has several advantages such as providing comprehensive variables and a variety of criteria for assessing organizational effectiveness. Hence, the two important considerations for the analysis of organizational effectiveness appear to lie in the perspectives of the different constituencies involved and the choice of assessment criteria.

Effect of different constituencies. Research evidence indicates that different constituencies hold different preferences for organizational effectiveness (Friendlander and Pickle, 1968; McLean, 1974; Whetten, 1978; O'Connell, 1983). McLean concluded from a study of faculty and administrators that certain personal values were related to preferences for certain goals and role positions. O'Connell (1983:672) reported that faculty and administrators differed on their perceptions of faculty effectiveness in teaching.

Although sex of respondents and geographical locations are not related to the individuals' perceptions of staff development, occupational role is frequently an important variable. Weleschuk (1977) found that faculty members of colleges in Alberta perceived a higher need for development activities than the administrators. Joyce et al. (1976:i-iv)

reported that while teachers, administrators, policy makers, and college of education faculty appeared to perceive the need for, and most issues of, staff development in the same way, there was significant disagreement concerning matters of planning, control and evaluation.

Criteria for effectiveness. Enns (1968:291) and Cameron and Whetten (1983:11) argue that defining organizational effectiveness, and criteria for assessing effectiveness, are equally difficult. However, attempts by scholars to conceptualize organizational assessment has provided some bases for selecting assessment dimensions. For example, Katz and Kahn (1980:162) view organizational assessment as "an attempt to describe a complex phenomenon in quantitative terms." By defining organizational assessment as "the systematic measurement of organizational functioning from the perspective of the behavioral system," Lawler et al. (1980:8-10) were able to identify seven key measurement areas for assessing organizational effectiveness. These are tasks, individuals, groups, formal organizational arrangements, informal organizations, environment, and outputs. Other writers, including Steers (1977), identify additional dimensions such as organizational climate, individual attachment, differentiation, integration, and interorganizational interaction.

Successful Staff Development

The literature is replete with the characteristics of successful in-service and staff development activities. However, as pointed out by Cruickshank et al. (1979), many of the reports do not meet the criteria for scientific and empirical research. Therefore, this section is devoted to identifying (1) elements considered to promote effectiveness and (2) factors used as effectiveness indicators for staff development.

Elements promoting effectiveness. Using the grounded theory approach, Campbell (1983) concludes that three core factors are essential for a successful faculty development program : (1) external stimuli; (2) support of key opinion leaders; and (3) a demand for change. Other factors identified by Carlberg (1980:27) to influence faculty development in the liberal arts colleges are: (1) faculty ownership; (2) administrative support; (3) voluntary

participation; (4) non-threatening evaluation; (5) individual approach; (6) climate of trust; (7) sense of accomplishment; and (8) institutional reward system.

Effectiveness indicators. The parameters which have been used by various researchers to describe the effectiveness of staff development include policies, program outcomes, staff characteristics, staff participation and organizational variables.

1. **Policies**. The term policy, as used in this context, embraces the rationale, definitions, aims and structure of staff development (Bolam, 1979:2). Siegel (1980:144) states that it is important for both administrators and faculty to define clearly from the outset the objectives of the faculty development program. The other aspects of this indicator are the procedure for needs assessment, the reward system and sources of funds.

2. **Program outcomes**. In the Rand study the following four outcomes were used as the dependent variables to assess effectiveness: (a) percentage of project goals achieved; (b) change in teacher behavior; (c) change in student performance; and (d) continuation of project methods and materials (McLaughlin and Marsh, 1978:71; Lawrence, 1974:13).

3. **Staff characteristics**. McLaughlin and Marsh (1978:84) state that faculty characteristics -- attitudes, abilities and experiences brought to a project -- have major influence on program effectiveness. Other instructor attributes found by Fordham and Ainley (1980:17) to show significant influence on program effectiveness are age, educational background, verbal ability and sense of efficacy.

4. **Participation**. Many writers consider faculty participation to be a useful effectiveness indicator (Lawrence, 1974; McLaughlin and Marsh, 1978; Mazzarella, 1980; Harris, 1980; Barth, 1981; McMahon, 1981). First, participation encourages collective review and modification of project objectives and procedures which in turn enhance the clarity of the project. Second, it brings about "affective contribution to project implementation" (McLaughlin and Marsh, 1978:80) through a sense of ownership and strong commitment to project objectives. Third, the involvement of faculty is fundamental to the achievement of the ultimate goal of staff development -- to improve student learning.

5. **Organization variables**. According to Dalin (1975:256), the key factors that influence understanding about educational change and its management include the degree of centralization and decentralization and the question of who is in charge. Berman and McLaughlin (1978:30) also identify three elements of organizational climate which affect effectiveness. These are (a) the quality of working relationships among staff; (b) the active support of the chief executive; and (c) the effectiveness of the project directors. They reported that good working relationships strongly correlated with the teachers continued use of the innovation. McLaughlin and Marsh (1978:72) also found that teacher commitment had the most consistently positive relationship with all the project outcomes of the Rand study. Organizational commitment in this context is defined as "the strength of an individual's identification with and involvement in an organization" (Bluedorn, 1982:137).

Summary

The elements of organizational effectiveness and successful staff development were identified. The two elements identified as important in analyzing organizational effectiveness are the effects of differing perspectives among different constituencies and the choice of criteria for assessing effectiveness. With regard to successful staff development, the elements that promote effectiveness and the indicators used for describing effective staff development were discussed.

E. Unique Aspects to Technical Education

The search for staff development studies that focused specifically on the organization of technical education produced very little information. Therefore, the aim of this section is to (1) highlight the unique nature of the organization of technical education and (2) describe specific staff development efforts in this area.

The Organization of Technical Education

Technical institutes as educational organizations appear to possess some unique characteristics that make their management somewhat different from other educational institutions. Traditionally, technical institutes were established as units of government departments to deal with the middle-level manpower development. Consequently, despite the recent trends to decentralize the administration of technical institutes, they continue to show characteristics of governmental bureaucratic management. Hence, Yorke (1977:167) and Fordham and Ainley (1980:54) suggest the following as some of the unique characteristics of technical educational organizations:

a. they tend to be more hierarchically structured than schools and colleges;

b. staff development decisions are generally entrusted to a committee composed of senior members of staff;

c. the hierarchical system tends to emphasize accountability in relation to allocation of funds for staff development;

d. promotions in the system are based on seniority, this has an implication for staff motivation and participation in staff development;

e. the tradition of technical educational organizations to recruit staff on the basis of their technical expertise creates the need for strong induction and orientation programs in order to make staff aware of the goals of the organizations as well as to provide them with the basic teaching skills; and

f. the nature of the curriculum of technical institutes, the increase in technological awareness, and the current demands on educational organizations to provide responsive education to members of the community, all combine to increase the employment of academic staff in technical educational organizations. Correspondingly, numerous differences exist among the academic staff in terms of age, educational qualifications and experiences.

Characteristics of Technical Instructors. Certain unique characteristics of the technical instructors are relevant to an assessment of staff development needs. They include age, educational qualifications (both teaching and non-teaching), previous teaching experience, and the length of previous non-teaching experience. Fordham and Ainley (1980:17) reported that instructors in technical and further education were, on average, ten years older than teachers in elementary and secondary education. They also found that most technical

instructors did not have initial teacher education, and they generally had non-teaching work experience before their recruitment into teaching. Of these the trade instructors appeared to have the greatest amount of work experience.

Both the age differences and the long non-teaching experience have implications for staff development planning and implementation. First, the relatively older age of the technical instructors suggests that most of them have been exposed to traditional forms of teaching that emphasize teacher-centered approaches. Consequently, the attitudes and values held by many of these instructors are likely to differ from many of the ideas and practices espoused in modern teaching methods. Thus, Fordham and Ainley (1980:34) reported from their study that:

> The greater the incongruence between the values reflected in the expected direction of educational change and those presently held by staff, the greater the difficulty in developing those skills and understandings among staff to ensure such educational changes.

Second, the gap between the time of specialist training and the time of recruitment into teaching suggests a deficiency in the instructors' specialist field because changes in knowledge and skills occur rapidly in the technological industry. Third, the lack of initial teacher education by many instructors creates different staff development needs and approaches. On the one hand, induction and orientation programs are required to deal with short-term objectives (Konrad, 1973; Collin, 1977). On the other hand, to fulfil long-term goals, instructors have to be encouraged to attend formal initial teacher preparation courses.

The instructor deficiency in both teaching skills and knowledge of the specialist field affect the approach of management to staff development in technical institutes. Fordham and Ainley (1980:37) note:

> While they (instructors) may be aware of a general requirement for further education in each of these areas they may not be aware of their specific requirement. For this they need to rely upon providing or support agencies, such as staff development officers.

The above-mentioned implications suggest that management models that relied solely on staff initiatives to identify their staff development needs are not adequate for the organization of

technical education.

Staff Development Efforts in Technical Education

The studies reported by Wroot (1970), Konrad (1973), Collin (1977), Weleschuk (1977) and Fordham and Ainley (1980) reveal the following as the important aspects of staff development efforts in the technical educational organizations: (1) aims of program; (2) needs assessment; (3) criteria for allocation of funds; (4) induction and orientation programs; and (5) characteristics of activities.

Aims of program. Fordham and Ainley (1980:55) concluded from their study that the overall thrust of staff development in technical education was (1) directed to the instructors' improvement of classroom practices and (2) made to emphasize educational administrative skills for senior staff. They noted, however, that there were no explicit aims that related to part-time academic staff and the continuing development of junior non-academic staff. Konrad (1973:49), Collin (1977:168), and Weleschuk (1977:106) also indicated that staff development efforts in Alberta colleges had initially given much attention to instructional development and little attention to personal and organizational development. However, the aims of the programs seem to have been broadened lately to reflect equal emphasis on all three dimensions: instructional development, personal development and organizational development.

Needs assessment. From a study of public colleges in Alabama, Land (1984) arrived at the following conclusions :

a. a majority of technical colleges reported written needs assessment policies while a majority of junior colleges and community colleges did not;

b. the structure of the institutional unit responsible for the needs assessment varied due to institutional type;

c. advisory committees were the most common provider of needs assessment for technical colleges, while junior colleges reported a higher use of direct surveys; and

d. the needs assessment process was reported to have a considerable impact on the identification of institutional priorities.

Sources of funds. The main source of funding for staff development in technical institutes is from the institutional budget. Fordham and Ainley (1980:56) reported that, in general, the funds made available by the central office to institutions were less than the requested amounts for staff development purposes. They also identified three main criteria used by technical institutes for allocating funds for staff development purposes. These were (1) the number of staff in a department; (2) each department's share of funds in the past; and (3) the estimates of a specific innovation.

Induction and orientation programs. Kelly and Connolly (1970:3) identify the purposes of orientation as follows: (1) to provide a transitional period; (2) to introduce faculty to the locally prescribed mission of the college; and (3) to bind individuals of diverse background into a more cohesive unit. According to Konrad (1973), Collin (1977), Weleschuk (1977) and Fordham and Ainley (1980), organizations of technical education emphasize induction and orientation programs. One reason for the emphasis is to make new instructors aware of and sympathetic to the goals of the organizations. Another reason is to provide beginning teachers with basic teaching skills since most of the technical institute instructors had not received initial teacher preparation prior to their employment.

Characteristics of activities. Wroot (1970:166) reported that the types of in-service and supervisory activities perceived by the instructors of the Alberta institutes of technology to be most helpful in improving teaching effectiveness included (1) the provision of sources of expert guidance and advice, (2) demonstration of teaching methods and techniques, (3) provision for practice teaching, and (4) opportunity to observe fellow instructors conducting classes, laboratory and shop work. Fordham and Ainley (1980) identify the important elements for describing staff development in the organization of technical education as the organizers of activities, the types of activities, and participation level. They found that while 25 percent of the activities reported by the sampled institutions were organized by the institutions themselves, about 73 percent were initiated by external bodies such as the universities, colleges of education, teachers' associations and industries.

The researchers noted further that the level of participation tended to reflect staff interest and flexibility of released time. According to the study, staff participation in terms of specialist field was closely related to the groups' representation in the sample.

F. Summary of the Chapter

This Chapter presented a review of relevant studies in the field of staff development and organizational effectiveness. The review covered the following five areas : (1) issues in policies and financing of staff development; (2) management and decision-making arrangements; (3) components and activities of staff development; (4) organizational effectiveness and successful staff development; and (5) unique aspects of the organization of technical education.

Policies on staff development must reflect both intrinsic and extrinsic rewards. While the institutional budget is the main source of funding, evidence indicates that external funding contributes to expansion of the program and increased faculty interest in the program. Communication and institutional leadership are emphasized as important issues in management. The major components and activities to consider in the planning of staff development include the desired goals, education and training concerns, diversification of development activities and degree of faculty involvement. Concerning organizational effectiveness, the two important elements are the effects of different perspectives and the choice of criteria for assessing effectiveness. Finally, due to the unique nature of the organization of technical institutes, staff development approaches require strong institutional leadership and the use of greater variations in development activities.

Chapter III

PERSPECTIVES OF STAFF DEVELOPMENT

The purpose of this chapter is twofold. The first part is designed to provide a survey of concepts and models that have been used by various researchers to describe staff development in educational organizations generally, and in postsecondary institutions in particular. The second part describes the conceptual frameworks used for this study.

A. Concepts in Staff Development

Conceptual Definition

The term staff development is defined in several ways by various writers to refer to an organizational response to the developmental needs of both individuals and the organization. In this connection, the concept is sometimes used to embrace many subsidiary terms like continuing education, in-service education, professional growth, renewal, advanced preparation and staffing (Harris, 1980:24). When used in this way, it covers the following organizational arrangements: manpower planning, selective recruitment, career development, improved performance and productive evaluation.

Staff development and organizational development. Another concept that becomes relevant in this kind of discussion is organizational development. While both concepts are necessary for maximum growth and effective change in organizations, some writers maintain that the two are different (Giles, 1972; Parsons, 1974; Richardson, 1975; Berquist and Phillips, 1975; Collin, 1977; Dillon-Peterson, 1981; and Roak and Davis, 1981).

The distinction which is often made between staff development and organizational development lies in the focus selected for bringing about improvement in organizations -- whether to achieve individual or organizational competence. According to Dillon-Peterson (1983:3), staff development and organizational development are often "perceived as correlates,

sometimes blurring or overlapping." Nevertheless, she makes an important distinction between the two. On the one hand, organizational development is the "process undertaken by an organization, or part of an organization, to define and meet changing self-improvement objectives" of the individuals and the organization as a whole. On the other hand, staff development is a "process designed to foster personal and professional growth for individuals within a respectful, supportive, positive organizational climate having as its ultimate aim better learning for students and continuous, responsible self-renewal for educators and schools."

Roak and Davis (1981:56) also differentiate between the two concepts regarding the differences in their approaches to organizational improvement. They state:

> Staff development and OD (organizational development) both work to improve school and ultimately education, but from somewhat different perspectives. Staff development attempts to achieve its goals primarily through an increase in individual competence while OD concentrates on organizational competence. Both strive to improve the lot of both teachers and students and to improve the quality of education as a whole. In the process of working to achieve their goals, both methods ultimately affect both the individuals and the organization. One complements the other, they function well side by side.

Distinction Between Staff Development and In-Service Education

Several terms are used synonymously and interchangeably to describe the concept of staff development (Pansegrau, 1983). On the one hand, there tends to be an agreement on the use of the following as synonymous terms: staff development, faculty development and professional development (Berquist and Phillips, 1975; Henderson, 1978; Dillon-Peterson, 1981; Konrad, 1983). On the other hand, some writers including, Collin (1977), Henderson (1979), Lieberman and Miller (1979), Sergiovanni and Starratt (1979), and Doll (1983), differentiate between staff development and in-service education.

According to Collin (1977:23), one of the clear distinctions between in-service education and staff development is provided by Good (1973) in the Dictionary of Education. Good defines in-service education as "efforts to promote by appropriate means the professional growth and development of workers while on the job." In contrast, staff development is "all efforts of school officials to recruit, select, orient, train or reasign staff

members to provide the best possible staff for the operation of the school."

Both staff development and in-service education are directed at improving student learning. For instance, Sergiovanni and Starratt (1979:286) note that "in many respects, a one to one correspondence exists between improving classroom instruction and increasing professional growth of the individual teacher." But they make a conceptual distinction between staff development orientation and in-service education orientation. They argue :

> While staff development is basically growth-oriented, in-service education typically assumes a deficiency in the teacher and presupposes a set of appropriate ideas, skills, and methods which need developing (Sergiovanni and Starratt, 1979:290).

Other theorists distinguish between the two concepts in terms of the nature of the activities they address. Doll (1983:31) proposes that "traditional in-service programs tend to be formal, centralized, group-oriented, and bureaucratic." In contrast, staff development activities tend to be "informal, centered where the teacher is, attentive to the needs of individuals and cooperatively organized and conducted." He concludes that "the former usually operate according to the deficit theory, whereas the latter can be designed to evoke and nourish human potential by capitalizing on teachers' strengths."

In view of the various conceptual definitions outlined above, the term staff development is used in this study to refer to a broader concept than in-service activities. The former embraces approaches toward individual and organizational renewal, while the latter refers to activities which are directed to address *specific* needs and improvement in the knowledge, skills and attitudes of the staff members already employed in the organization.

Purpose of Staff Development

Searching for the purpose of staff development, McAleese (1979:123) argues that "staff development is not something which some people (staff developers) do to others (staff)." He suggests four aims based on this assumption: (1) to help staff perform as effectively as possible in their existing roles; (2) to provide opportunities for staff to prepare themselves for changing duties and responsibilities; (3) to provide opportunities for members

of staff to equip themselves for career development; and (4) to enhance job satisfaction. These four aims, and others discussed by organizational theorists, tend to reflect in two main purposes of staff development: (1) growth and renewal of individuals in organizations; and (2) institutional adaptation to external environment.

Growth and renewal. Educational institutions, as social organizations, are generally under pressure to grow (Day, 1981; Whetten, 1981; Behn, 1983; Boyd, 1983; Cameron, 1984). At one level, the growth in human knowledge and the development in technology demand that educational organizations alter their practices. At the other level, political, social and economic conditions tend to put pressure on organizations to modify their operations. Day (1981:vii) notes that change and growth are endemic in our complex society. She states: "the school or staff which does not change or grow is destined to atrophy, to become obsolete, and to be a burden rather than a bulwark to us and to the communities we serve." In his discussion, O'Banion (1972:101) links the purposes of staff development in the community college with new developments in curriculum, instructional technology, organizational patterns and teaching-learning styles. In this respect, he calls for the provision of opportunities to the staff in the community college to learn about and adapt innovations to their situations.

Another purpose of staff development is to provide opportunities to the members of the organization to renew present knowledge and skills as well as to grow in their chosen profession. The concept of growth, as noted by Joyce and Showers (1983:30), is of crucial importance to the teaching profession. They argue :

> Nothing is more important to a human being's health than his or her ability to continue to grow and adapt. No profession manifests that truth more than education. The teacher's life is one of changing conditions: new students, new ideas, and social ferment. Adaptation is essential. There is no endeavor where lack of growth is more clearly and desperately damaging than teaching.

In connection with this, Harris (1980:13) states that those charged with the responsibility of education in society must realize that "significant improvement of education cannot be accomplished without a major programmatic effort at the in-service education of personnel" in education.

Organizational adaptation. In addition to the underlying philosophical argument for change, there are practical reasons for increased commitment and interest in staff development. First, the low rate of staff turnover in the educational institutions (Konrad, 1983; and Adkins, 1983) makes the continuing education of the faculty members an essential preoccupation of administrators. Second, Toombs (1975:701) notes that during the days of the rapidly expanding economy of the seventies, budget increases for addition of new programs, new staff and new facilities were readily available. Consequently, program expansions and personnel recruitment preoccupied educational administrators, and little serious attention was given to policy direction and staff renewal.

In recent years, however, educational administrators face a different kind of challenge. In a period of modest growth, or even decline in the economy, which in turn has "increasingly politicized the environment of education" (Boyd, 1983:117), changes in the quality of education seem to depend heavily on changes in the performance of the present staff. Thus, as suggested by Behn (1983), both administrators and faculty need to rethink strategies for improvement. Therefore, it is appropriate for staff development to address what Cameron (1984:124) calls "organizational adaptation." That is, those modifications and alterations that the organization must go through in order to adapt to changes in the external environment. As Cameron puts it, "organizations are not assumed to be at the mercy of an immutable environment; rather, they can act and influence their environment."

Models for Staff Development

Within the last two decades some attempts have been made to generate theoretical frameworks to enhance understanding of the concept of staff development. Some of these models include the work of Bate and McIntosh (1972); Berquist and Phillips (1975); Gaff (1975); Toombs (1975); Collin (1977); Centra (1978); Bolam (1982a); and Pansegrau (1983). A summary of these models is provided in Table 3.1.

Table 3.1
Examples of Models for Staff Development

MODEL	ASPECTS CONSIDERED	DIMENSIONS OF MODEL	INSTITUTIONAL FOCUS	VARIABLES EMPHASIZED
Bate and McIntosh (1972)	Areas of Focus and Strategies	1. Personal improvement 2. Program improvement 3. Organizational improvement	Community College	1. Academic specialization 2. Vocational competence 3. Program effectiveness 4. Organizational climate 5. Planned intervention 6. Facilitating action
Berquist and Phillips (1975)	All aspects (Heuristic)	1. Personal development 2. Instructional development 3. Organizational development	Higher Education	1. Diagnosis of needs 2. Develop teaching skills 3. Curriculum development 4. Personal growth 5. Organizational effectiveness
Gaff (1975)	All aspects (Heuristic)	1. Faculty development 2. Instructional development 3. Organizational development	Higher Education	1. Course design 2. Knowledge and skills 3. Teaching effectiveness 4. Self-renewal 5. Learning materials
Toombs (1975)	All aspects (Heuristic)	1. Professional 2. Curricular 3. Institutional	Higher Education	1. Career development 2. Retraining 3. Instructional improvement 4. Institutional governance 5. Autonomy, tenure, and service

Table 3.1 (Continued)
Examples of Models for Staff Development

MODEL	ASPECTS CONSIDERED	DIMENSIONS OF MODEL	INSTITUTIONAL FOCUS	VARIABLES EMPHASIZED
Collin (1977)	Developmental Activities	1. Needs 2. Mode of operation 3. Level of functioning 4. Strategy	Community College	1. Self-renewal 2. Planned change 3. Organizational development 4. Personal growth 5. Management role
Centra (1977)	Developmental Programs	1. Faculty involvement 2. Instructional-assistance 3. Traditional practices 4. Assessment emphasis	Higher Education	1. Workshop, seminar 2. Sabbatical/training grants 3. Assistance to faculty 4. Instructional technology 5. Instructional evaluation
Bolam (1982a)	In-service Courses	1. Types of courses 2. Elements of courses	School	1. Knowledge extension 2. Teaching skills 3. Delivery methods 4. Evaluation/follow-up 5. Award/accreditation
Pansegrau (1983)	Formal and Informal Activities	1. Types of activities 2. Reasons for participation	School	1. Personal needs 2. Organizational needs 3. Mandatory program 4. Voluntary involvement 5. Personal growth

The Bate - McIntosh model. Bate and McIntosh (1972:24) suggest that staff development, in the context of the community college, embraces three categories of concerns: individual, program and organization. However, they propose that staff development may be analyzed from two main perspectives, namely, (1) areas of focus and (2) strategies.

In terms of areas of focus, Bate and McIntosh consider three types: individual improvement, program improvement, and organizational improvement. The concerns for individual improvement include provision for keeping abreast with the field of specialization, as well as developing skills in areas of designing, operating and evaluating learning situations. Program improvement includes assessing the effectiveness of existing programs and exploring new ways to create effective learning environments. The organizational concerns include matters related to staff satisfaction and morale (or organizational climate) and improved organizational functioning in areas of communication and decision-making.

Concerning the strategies for staff development, Bate and McIntosh identify two types: active and passive. Active strategies involve a direct or planned intervention to change existing practices and procedures. Passive strategies rely on direction provided by individuals within the organization and they seek to be sensitive to the individuals' expressed needs. The intent of this strategy is to be facilitative as opposed to directive.

The Berquist - Phillips model. This is one of the first models proposed for faculty development in postsecondary education, and is considered to provide a comprehensive perspective (Collin, 1977; Centra, 1978; Konrad, 1983). Assuming that significant changes in an organization take place at three levels -- attitude, process and structure -- Berquist and Phillips identify three components of faculty development. The components, regarded as highly related, are instructional development, institutional development and personal development.

Instructional development is the primary component because instruction is considered the primary function of the faculty member. This component deals with issues of process change such as (a) instructional evaluation; (b) instructional diagnosis; (c) microteaching; (d)

educational methodology and technology; and (e) curriculum development. The organizational development component concerns issues of structural change. It deals with issues of change in decision-making procedures which include (a) departmental decision-making and conflict; (b) departmental team building; and (c) management development. The personal development component deals with issues of changes in attitudes and it includes: (a) faculty interviews; (b) life-planning workshops; (c) interpersonal skill training; (d) personal growth workshops; and (e) supportive and therapeutic counseling.

Other three-perspective models. The Gaff (1975) model and the model suggested by Toombs (1975) also identify three components of staff development. Gaff refers to his model as faculty renewal and identifies the three components as instructional development, organizational development and faculty development. His concept of organizational development is similar to that outlined above in the Berquist - Phillips model. However, his view of instructional development focuses more closely on course design and learning materials. For the third component, Gaff substitutes faculty development for personal development. As noted by Centra (1978a:190), Gaff's view of faculty development "includes not only activities related to the affective development of faculty members but also those directed toward improved teaching behavior."

Toombs (1975:702) describes faculty development in terms of the following three components: professional, curricular and institutional. He considers the professional to be the primary component and the curricular and institutional components as secondary. The professional component embodies some of the conceptual qualities of professionalism. These include (a) a basic body of knowledge; (b) the ideal of service; and (c) the need for career development. The curricular component includes not only the improvement of instruction, but also the designs for learning. The institutional component deals with issues of faculty participation in management and governance of an institution, as well as raising faculty members' consciousness.

In general, the four models described above agree that the three main components of staff development are instructional development, organizational development and personal development. These models tend to be heuristic in their perspectives (Centra, 1978b:152). Nevertheless, they have provided a useful rationale for the study of staff development in postsecondary institutions (Collin, 1977; Centra, 1978a; Konrad, 1983).

Activity-based models. Using the grounded theory approach, Collin (1977) and Centra (1978) have proposed models which highlight activities for faculty development in postsecondary educational institutions. Collin (1977:75) views staff development as a "program or process of organizational self-renewal." Focusing on the community college organizations, he proposes a four-dimensional model: (1) needs; (2) mode of operation; (3) level of functioning; and (4) strategy.

The types of needs include organizational needs, membership needs, and program needs. The mode of operation includes institutional mode, membership mode, and autonomous mode. The four components in the level of functioning are operations, regulations, learning and consciousness. The three components of the strategy dimension are normative-re-educative, empirical-rational, and power-coercive.

Centra's (1978a:196) model is based on the patterns of development practices predominant among colleges and universities. By the method of factor analysis, he found four factors which described institutional responses to 45 developmental practices listed in a survey questionnaire. The four factors are (1) high faculty involvement, (2) instructional-assistance practices, (3) traditional practices, and (4) emphasis on assessment.

The high faculty involvement activities include workshops, seminars and programs to acquaint faculty with the goals of the institution. The instructional-assistance practices include using specialists to give assistance to individuals and the faculty as a whole in instructional and course development and to help develop teaching skills. The practices in the traditional group include sabbatical leaves, visiting scholar programs, and grants for instructional improvement. The assessment practices include ratings by students, by colleagues, and by administrators.

Two-perspective models. The last two models in Table 3.1 are different from the first six in two respects. They provide two perspectives for describing staff development and they are developed from the orientation of the school, rather than college organizations. But the analytical frameworks of both models also apply to the college organizations. Bolam's (1982a:26) model is shown in the Appendix, as Figure C.3.1, in which one perspective describes three types of courses used in staff development, namely, long courses, short courses, and institution-focused courses. The second perspective concerns elements of staff development or in-service activities such as aims, location, participants, content, methods, awards and evaluation.

For Pansegrau's (1983:159) model, shown as Figure C.3.2 in the Appendix, one perspective examines the reasons for staff participation in development activities. The reasons vary from (1) satisfying high level needs such as a desire for growth, to (2) meeting lower level needs such as correcting a deficiency in the staff that has been identified by management. The second perspective of the model classifies staff development activities into four groups on the basis of the extent to which the activities become formal and mandatory as opposed to informal and voluntary. The four groups are (1) mandatory and formal in conjunction with required change; (2) mandatory and formal but not directed at a particular change; (3) formal but of voluntary nature; and (4) non-formal and voluntary.

Summary

To this point, an overview of the different perspectives used by various researchers to describe staff development is presented. The eight models identified in Table 3.1 may be categorized into three major groups. The first four (Bate - McIntosh, Berquist - Phillips, Gaff and Toombs) models form one group. These models are heuristic in their approaches and they conceptualize staff development in terms of three main components: instructional development, organizational development, and personal development. With the exception of Toombs' model, which emphasizes professionalism, the models in this category treat instruction

as the primary component and organization and personal components as secondary.

Collin's and Centra's models constitute the second category. Using the grounded theory approach, each model classifies staff development patterns and practices into four main groups. Therefore, these two models are based on empirical data, but they also focus on development activities and strategies.

The third category comprised Bolam's and Pansegrau's models. These writers conceptualize staff development from two perspectives. One examines faculty participation in terms of needs. The other deals with the characteristics of development activities. Hence, the models explore relationships between the nature of developmental activities and faculty desire to participate.

While the three categories of models provide different perspectives for examining staff development, they are not necessarily alternative models. They all contribute to the understanding of the concept but with different assumptions and directions. For this study, ideas were adopted from the activity-based models to develop a framework that was used to assess the staff development program at NAIT. In addition, the two-perspective models were adapted to provide another framework that was used to examine the orientation of the program on the two perspectives: institutional requirements and individual personal needs. The next section of the chapter provides the frameworks of assumptions and directions for the study.

B. Conceptualization of the Study

This study was designed to describe the characteristics and effectiveness of the staff development program at NAIT. It was also intended to determine the balance of emphasis in the program between meeting institutional requirements and addressing individuals' personal needs. To accomplish these purposes, two submodels of general systems theory were used to develop the conceptual frameworks of the study as outlined below. The first submodel is the social systems theory. This is used to develop a model for examining the balance of emphasis between meeting institutional requirements and individuals' personal needs. The second

submodel is the open systems concept which is used to develop a model for assessing the program.

Two-Dimensional Perspective of Staff Development

Silver (1983:242) states that a social system is both a unit of the society as a whole and a collectivity of individuals. As a result, the behavior of each individual within the social system is shaped by two dimensions of social reality: the sociological dimension and the psychological dimension. This theoretical view applies equally well to the concept of staff development. Contributing to this discussion, Tyler (1971:13) suggests that the historical development of in-service education tends to highlight individual development -- to remedy assumed deficiencies in pre-service preparation. But Collin (1977:31) argues that certain environmental influences increase the concern for institutional requirements in staff development. He writes:

> Much of the interest in developing the organization through staff development no doubt has come about in the community college not so much by an advancement of the theory and practice of staff development as by necessity, necessity created by steady state . . . coupled with the view of the community college as a dynamic, innovative institution.

A suggestion is made by Berquist and Phillips that inadequate attention is given to instructional development because there is a conflict regarding requirements for faculty recruitment and the actual job to be performed after placement. They argue that while teaching is considered to be an important aspect of the professional role of the college faculty, teaching is frequently not a serious concern in the hiring process. Although this argument revolves around instruction, the ultimate concern in the debate is how to achieve a proper balance in addressing the personal and institutional factors in staff development. In this connection, the Getzels and Guba (1957) social systems model, which simultaneously addresses the nomothetic and idiographic factors, provides a useful theoretical basis for examining the two orientations of staff development -- institutional requirements and individual needs.

Getzels and Guba model. In their model, Getzels and Guba described the sociological and psychological dimensions of a social system as nomothetic and idiographic, respectively, as shown in Figure C.3.3 in the Appendix. The former describes the "institution" and the different roles (positions within the institution). The latter concerns personalities and needs of the individual members of the institution (Sergiovanni and Starratt, 1979:63; Silver, 1983:243). But the two dimensions are interdependent and complementary to each other. According to Silver (1983:244):

> If the nomothetic dimension existed alone each collectivity of people would function like a precision mechanism . . . . If the idiographic dimension existed alone each collectivity of people would be chaotically disordered as each individual sought self-expression and pursued private intentions.

In summary, the idiographic dimension of the social system is that which renders behavior unpredictable, divergent and particularistic. The nomothetic dimension represents order, regulation and rational progression toward goals.

Relevance of the model. The foregoing would suggest that the Getzels and Guba model constitutes a relevant theoretical basis from which to address this study. As pointed out by Silver (1983:251-57), the following major propositions of the theory seem to be substantiated by related research on educational organizations :

a. role and personality factors affect both attitudes and behaviors;

b. each individual's behavior is the result of the interplay between that person's needs and the organizational climate; and

c. various role conflicts in a social system can be explained in terms of the variations in the individuals' perceptions and the lack of congruence between the expectations of different individuals or groups.

Thus both organizational climate and attitudes of the members toward staff development are crucial for its success. For instance, Starbuck (1965:451) argues that growth depends upon the organizational ability to exploit the opportunities created by environmental change. And the creation of environmental change depends upon the attitudes of the organizational members. Therefore, as Joyce (1981:117) says, the improvement of staff development is a "matter of generating a rich environment in which every education

professional becomes a student of education and works continuously to improve his or her skills."

The adapted model. In relating the social systems theory to staff development, Pansegrau (1983:159 and Bolam (1982a:12) suggest a two-dimensional analysis for determining the different purposes of staff development. The models proposed by Pansegrau and Bolam are presented as Figures C.3.2. and C.3.4., respectively, in the Appendix. They explore the relationships between purposes of staff development and different developmental activities. The rationale of the two models suggests that the orientation of staff development in addressing the two perspectives of institutional requirements and individual personal needs would reflect in (1) the purpose that is emphasized by the organization; (2) the types of activities used; and (3) the nature of organizational control exercised over individual's participation in the program. The assumption that the program orientation reflects the way the two perspectives are emphasized is noted by Katz and Kahn (1980:163). They state :

> Both systemic variables (insofar as they have to do with human organizations) and individual variables refer ultimately to human acts, as all organizations consist ultimately of recurring patterns of such acts. But the aspects and combinations of behavior that our concepts direct us to observe are very different if we take the systemic approach than if we choose the individual level of conceptualization.

Based on the above assumptions, and to address one purpose of this study, the model presented in Figure 3.1 is proposed as a conceptual framework for the analysis of the orientation of staff development in addressing the two perspectives: institutional requirements and individual personal needs. The following rationale forms the basis of this model:

1. that the orientation of staff development can be described in terms of its three basic characteristics, namely the purpose, management control, and types of activities used;
2. that certain variables may be identified for each of the basic characteristics to emphasize either the nomothetic or the idiographic factors; and
3. that the variables constitute a number of scales for describing the program emphasis toward institutional requirements or individual personal needs.

Therefore, in this study, the orientation of the staff development program at NAIT is described in terms of the variables identified in Figure 3.1.

	Program Orientation	
Program Characteristics	Nomothetic Emphasis OR Institutional Requirements	Idiographic Emphasis OR Individual Needs
1. Purpose	Group Performance Institution-focused	Personal Education Use of External Agencies
2. Control	Mandatory Participation External Reward	Voluntary Participation Inner-Motivation
3. Activities	Formal Activities Instructional Development	Informal Activities Personal Development

Figure 3.1
Two-Orientational Perspective for Describing the Balance of Emphasis of Staff Development Program Between Meeting Institutional Requirements and Individual Needs

Assessment from the Open Systems Perspective

Another purpose of the study is to assess the effectiveness of the program. In this connection, the open systems concept is used as the basis for developing a theoretical framework. Scott (1980:319) notes that because diverse conceptions of organizations are held by various analysts, several distinctive sets of criteria for assessing and evaluating effectiveness of organizations have been developed. But Scott (1980:319); Nadler and Tushman (1980:266) and Seashore (1983:57) all suggest that the open systems perspective always remains as one of the useful schema for conceptualizing effectiveness.

The open systems concept. An open system, as viewed by Silver (1983:52), "imports many diverse elements at a rapid rate from the environment and uses those inputs for the interaction among components in the production of diverse outputs." Also stressing the importance of the environment, Scott (1980:111), states that "open systems are subject to the *law of limited variety*." That is, they exhibit no more variety than the variety to which they have been exposed in the environment.

Three prominent developments in organizational theory have increased the tendency of researchers to view organizations as open systems. The first, as noted by Whetten (1981:81), is that organizations must obtain resources from the environment and establish markets for their final outputs in order to survive. The second relates to the highly politicized activities that go on in public organizations due to the struggle among interest groups for control over resources in order to advance their preferred values and objectives. The third concerns decision making in organizations which is characterized by tension between the routine and the novel. This tension may affect change in two ways: (1) to sacrifice innovation for conservation so as to rely on established procedures to solve problems and (2) to use precedent, expediency, and convenience as a form of guide so as to avoid conflict.

The three issues identified above are important characteristics of educational organizations. Over the past decade, in social and economic terms, education is a declining industry (Whetten, 1981; Behn, 1983; Boyd, 1983; Toombs, 1975). Therefore, educational administrators would be expected to be aware of several aspects of environmental scarcity -- declining enrolment, declining economic budget, declining public confidence, and declining legitimacy of administrative authority (Boyd,1983:1). Administrators also need to be cognizant of new demands in administration which, according to Whetten (1981:82), have "shifted from short-term responsibility for internal allocation of resources and supervision of the production function to long-term strategy formulation to ensure the political and economic viability of the organization."

Because the open systems concept recognizes both internal actions of organizations and effect of the environment, it is a useful analytical tool for the planning of organizational assessment. However, as Nadler (1980:122) observes, while the open systems theory provides a way of thinking about organizations as a whole, it does not provide specific constructs or relationships to be tested. So it is necessary to develop what Nadler refers to as an "organizational submodel which describes parts of the system of organizational behavior." For this study one such organizational submodel is developed for assessing the staff development

program at NAIT. The model is shown in Figure 3.2.

The Assessment Model

The model shown in Figure 3.2 depicts an open systems orientation for assessing the effectiveness of staff development. Essentially, it provides a framework for identifying and selecting assessment criteria and it is based on three main assumptions:

1. that assessment involves examination of "input-process-output" relationships;
2. that the components of the organization, as a social system, may be viewed from four important perspectives of (i) employee variables, (ii) managerial practices, (iii) organizational characteristics, and (iv) environmental factors; and
3. that feedback mechanisms are essential features of assessment and evaluation.

Using these assumptions, it is possible to identify six main phases in the assessment of staff development. They are (1) needs assessment phase; (2) conceptualization and definition phase; (3) focusing or input phase; (4) process phase; (5) analysis and interpretation of output phase; and (6) feedback or comparison phase.

Needs assessment phase. Staff development programs must address the needs of the organization and individual members. Yet evidence indicates that both individuals and institutions tend to lack the skills for identifying needs (McMahon, 1981; Bolam, 1982b). Therefore, the assessment must begin with the examination of issues of needs identification in terms of policies, aims, strategies and personnel involvement.

Conceptualization and definition phase. Staff development is a dynamic concept. As a result, constant redefinition and reconceptualization are essential to meet the constantly changing needs of the organization and the individuals. This is an important phase because the way in which staff development is defined will tend to influence the subsequent phases of the model.

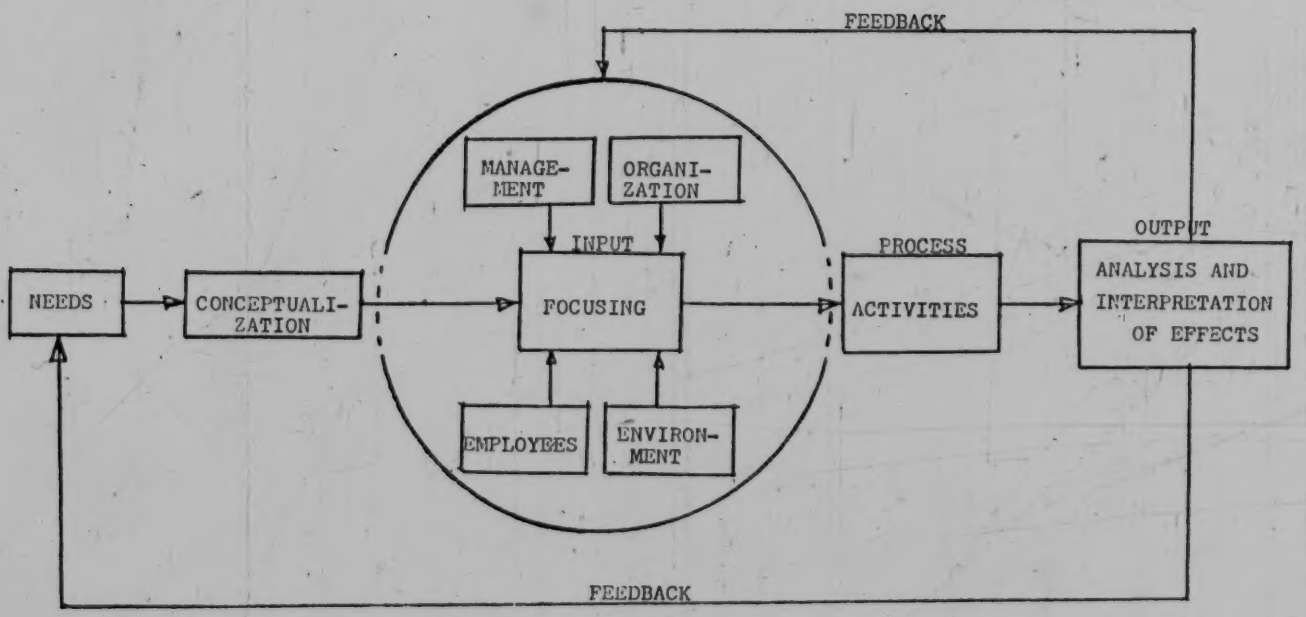

Figure 3.2

A Model For Assessing Effectiveness of Staff Development In Educational Organizations

Focusing or input phase. This is essentially the planning or development stage of the program. This phase is concerned with identifying the input variables by focusing on the four main components -- employee variables, managerial practices, organizational characteristics, and environmental factors. This phase is also concerned with funding issues.

Process phase. The focus in this phase is on the variety of activities and strategies that are used to implement staff development. The concerns in this phase include issues of formal and informal activities, relevant activities, and frequency and variation in the activities. Also important is the effective use of human and material resources in the implementation efforts.

Analysis and interpretation phase. In this phase the effects of the staff development efforts are analysed. The effect of each identified variable is examined separately as well as its influence on the other variables.

Feedback phase. The effects, as analysed in the previous phase, are compared with both the original and new needs of the organization and individual members. Any differences found in the comparison are treated as additional needs and the whole cycle, consisting of the six phases, is repeated. The feedback phase also maintains that assessment is a continuous process and the frequency of the cycle depends upon the nature and number of variables considered.

Use of the model. The usefulness of the information obtained using this model, and indeed any assessment model, depends on the comprehensiveness and validity of the variables, indicators and criteria to be used. According to Ratsoy (1983:5), often a comprehensive approach is neither feasible nor necessary. Therefore, the individuals using the assessment information ought to be aware of what is included and what has not been included. In this regard, Ratsoy suggests that the use of a checklist as a guide for choosing assessment parameters and indicators is an advantage. Consequently, for this study, the proposed model is used to develop a list of assessment dimensions and indicators as presented in Table 3.2.

Table 3.2
Dimensions and Indicators for the Assessment
of the Staff Development Program at NAIT

ASSESSMENT DIMENSIONS	SUGGESTED INDICATORS
Needs Identification	1. Guiding policies 2. Constituency differences 3. Involvement of personnel 4. Coordination by management
Employee Variables	1. Characteristics of academic staff 2. Knowledge, skills, attitudes 3. Participation of staff 4. Attachment to interest groups 5. Satisifaction with efforts
Managerial Practices	1. Definition of objectives 2. Communication of objectives 3. Leadership and guidance 4. Acquisition of resources 5. Flexibility in implementation 6. Staff obligations
Organizational Characteristics	1. Decision structure 2. Climate for cooperation 3. Commitment to goals 4. Reward, benefit 5. Source of funds
Environmental Factors	1. Economic and political 2. Enrolment changes 3. Technological changes 4. Linkages with other agencies
Implementation Activities	1. Formal programs 2. Informal activities 3. Relevance and appropriateness 4. Frequency and emphasis 5. Human and material resources 6. Variations in activities
Program Outcomes	1. Student learning 2. Teacher change : knowledge, skills, attitudes, improved performance 3. Organizational change : team work, improved services, commitment to goals 4. Awareness of environment

In developing the list, the eight models described in this chapter were used to identify the variables. The list of dimensions and indicators is then used to develop the survey instrument for the study.

Summary of the Chapter

This chapter provided an overview of concepts in staff development and described the conceptual frameworks for the study. The first section presented conceptual definitions, purposes, and theoretical models used by various researchers to describe staff development. In the second section, the assumptions and ideas presented in the first were employed to develop two models that provided the frameworks of assumptions and directions for the study. First, Getzels' and Guba's social systems theory was used to develop a model which provided the theoretical perspective for describing the characteristics and orientation of the staff development program at NAIT. Second, the open systems concept was employed to develop a model which provided the rationale for identifying the variables used in assessing the effectiveness of the program.

Chapter IV

RESEARCH METHODOLOGY

The purpose of this study was to determine the perceptions of the instructional staff at NAIT regarding the staff development program of the Institute. This chapter describes the population and the selection of the sample, data sources, and design of the questionnaire. The procedure followed to collect the data and the treatment of the data are also outlined.

A. The Population and the Sample

The entire instructional staff at NAIT constitutes the population for the study. They include 461 instructors and 137 instructional supervisory staff. That is, the total population is 598 academic staff.

The Sample Size

A stratified sample of 150 academic staff was randomly selected from the total population. The stratification was based on three factors: (1) the two classifications of instructors and instructional supervisors; (2) the three principal divisions responsible for instruction in the Institute; and (3) the fifteen instructional departments. Two main factors were influential in deciding the sample size of 150 academic staff. One was the amount of instructors' time that the Institute could afford to spare or commit to the study. The other was the time constraints for the study.

The Selection Procedure

The first decision was to use an instructors' and supervisors' ratio of approximately 2 to 1 so as to justify a comparison of differences between them. Therefore, the sample of 150 was made up of 105 instructors and 45 supervisors. The second decision was to use equal numbers of staff from the three principal divisions so that comparisons among the divisions

could be based on actual numbers and percentages. As a result, 50 staff members, consisting of 35 instructors and 15 supervisory staff were randomly selected from each of the three divisions.

To achieve true representativeness of the sample, and hence to improve the validity of the study, the selection was distributed proportionately among the 15 instructional departments and the two staff categories as shown in Table 4.1. The table of random numbers (Borg and Gall, 1979:734) was used to select the individual staff members from the departmental lists provided in the 1984-85 Calendar of the Institute.

Table 4.1
Proportional Distribution of the Sample

	DEPARTMENT	ACTUAL NUMBERS		SAMPLE SIZE	
	I. BUSINESS AND APPLIED ARTS DIVISION				
		Supervisors	Instructors	Supervisors	Instructors
1.	Business Administration	15	68	5	15
2.	Applied Arts	10	25	3	5
3.	Food Services	5	19	2	4
4.	Health Sciences	8	27	3	6
5.	Medical Sciences	7	25	2	5
	TOTAL	45	164	15	35
	II. INDUSTRIAL DIVISION				
		Supervisors	Instructors	Supervisors	Instructors
6.	Auto-Diesel	13	40	5	7
7.	Construction	10	37	3	6
8.	Electrical	7	41	2	7
9.	Mechanical Trades	11	66	4	11
10.	Related Subjects	4	23	1	4
	TOTAL	45	207	15	35
	III. ENGINEERING TECHNOLOGY DIVISION				
		Supervisors	Instructors	Supervisors	Instructors
11.	Academic Studies	9	37	3	7
12.	Civil & Architecture	10	55	3	10
13.	Electronics	16	62	5	12
14.	Mech. Engineering	7	10	2	2
15.	Resource Technology	5	26	2	4
	TOTAL	47	190	15	35
	GRAND TOTAL	137	561	45	105

B. Sources of the Data

The choice of approaches to data collection involves comparing the strengths and weaknesses of the various methods within the context of a particular study. To assist in the choice process, Lawler et al.(1980:321) have identified a list of twelve attributes for assessing the various data collection methods. The attributes include complexity or difficulty of use, reliability, statistical validity, face validity, sample size and selection, costs, and variables to be measured. Others are ethical issues, freedom from bias, member acceptability, flexibility and adaptability, and richness of data produced.

Choice of Questionnaire

The factors considered in the choice of questionnaire for the data collection included validity, costs, sampling, complexity, richness of data, time constraints, accessibility, and ethical issues. Using the argument by Lawler et al. (1980:334), that the fixed-response questionnaire is stronger on the above factors, the questionnaire used for this study contained mainly forced-choice items. Whereas interviews could have provided similar data, the questionnaire was used because the latter has certain advantages over the former. For example, in addition to the questionnaire being a "self-administered structured interview, . . . it is generally simple to administer, it is low cost, it has high validity and it is less threatening" (Lawler et al. 1980:331,335).

However, social science researchers advocate the use of multiple methods or triangulation (Webb et al., 1966; Jick, 1979; Lawler et al., 1980; Turner, 1981; Brunner, 1982). In this connection, the suggestion by Jick (1979:603), that "blending and integrating a variety of data and methods, as triangulation demands, may be seen as a continuum that ranges from simple (within-method triangulation) to complex (between or across methods) designs," becomes helpful. Therefore, to obtain a variety of data for the study, interviews and examination of archival documents were used as supplementary methods. The use of a variety of sources contributed to make the survey questionnaire meaningful to the respondents and it

also improved the validity of the data as a whole (Lawler et al., 1980:332).

Examination of Documents

The divisional library of Research and Academic Development Division at NAIT was the main source for examination of archival documents. The library has records on various staff development activities dating back to 1967. Most of the records are reports on the objectives, activities, and resources for the Institute's in-service education which is provided every August for newly recruited instructors. Few evaluation reports on in-service activities were found. Other documents examined include the Institute's Calendar, annual reports and the academic staff collective agreement.

The data obtained from these sources were used for two main purposes: (1) they provided facts and relevant information that were used to develop the items of the survey questionnaire, and thereby made it possible to use the language of the Institute that was meaningful to the respondents; and (2) they provided additional factual information that enriched the data used for describing the staff development program at NAIT.

Interviews Conducted with NAIT Officers

Discussions and interviews were held with the Director of Research and Academic Development and the Manager of Staff Training and Personnel Development at NAIT. Some of the interviews were structured but open ended. Others were unstructured. The purpose of these discussions and interviews was to obtain relevant data that were not easy to obtain from the academic staff with the questionnaire. For example, data regarding budgets for staff development could not be fully assessed with the survey questionnaire. The discussions held with the two officers also contributed to comprehensiveness of the questionnaire, and hence improved the validity of the instrument.

C. Development and Design of the Questionnaire

To obtain the appropriate data to meet the purpose of the study and to answer the specific questions raised in the problem statement, the survey questionnaire was structured into three main parts. Part I was used to collect biographical information on the academic staff. Part II provided data for describing the nature and characteristics of the staff development program at NAIT. Part III consisted of items that were used to assess the effectiveness of the staff development program as perceived by the academic staff.

Development of the Questionnaire

Initially, a total of 123 items were developed based on the dimensions and variables identified with the two proposed models in Chapter III, which provided the conceptual frameworks for this study (Figure 3.1 on page 68; Figure 3.2 on page 71; and Table 3.2 on page 73). The initial draft of the questionnaire was given out to colleagues knowledgeable in educational administration for their comments regarding ambiguity, redundancy and overlaps in the items. The comments received and the subsequent discussions resulted in the preparation of the first working draft of the questionnaire with 118 items.

Copies of the first working draft were given to the supervisor of this study at the University of Alberta, the Director of Research and Academic Development, and the Manager of Staff Training and Personnel Development, both officers at NAIT, for their study and comments. A special session was later held with the two officers at NAIT to discuss their comments and suggestions.

As a result of the discussions, some changes were made to the questionnaire. Thus, a second working copy of the questionnaire was prepared, consisting of 89 items, and tested later in a pilot study involving ten members of the academic staff at NAIT. Following the pilot study, further changes were made to the questionnaire. Hence, the final copy of the survey questionnaire contained 90 items as shown in Appendix A.4.2.

Design of the Questionnaire

Using the open system assessment model proposed in Chapter III (Figure 3.2, page 71), seven assessment dimensions and a number of indicators were identified as shown in Table 3.2, page 73. The seven dimensions were (1) needs identification, (2) employee variables, (3) managerial practices, (4) organizational characteristics, (5) environmental factors, (6) activities used, and (7) outcomes of the staff development efforts. The rationale for the choice of the dimensions and parameters are discussed below for the three parts of the questionnaire.

Part I : Biographical Information. The assessment model proposed in Chapter III (Figure 3.2) was used to identify the following relevant employee variables (1) age; (2) staff position; (3) educational background; (4) pedagogical training; (5) work experience; and (6) participation of staff in development activities (Table 3.2). Using these variables, Part I of the questionnaire was designed to achieve the following results:

a. to categorize the staff for comparison on the basis of certain factors such as age, position, instructional division, department, educational level, and work experience.

b. to explore relation between staff characteristics and staff participation in development activities; and

c. to help with the explanations of similarities and differences found in the study.

Part II : Program Characteristics. Selection of the variables used to describe the staff development program at NAIT was guided by (1) the review of empirical studies presented in Chapter II; (2) the review of theoretical perspectives of staff development presented in Chapter III; and (3) the two models proposed in Chapter III. Part II of the questionnaire was structured (1) to provide data for describing the general characteristics of the staff development program and (2) to determine the program orientation on selected variables. Thus, using the proposed two-perspective model for describing staff development (Figure 3.1, page 68) and the variables identified in Table 3.2 on page 73, 21 items were developed for obtaining data to describe the following four aspects of the program: (1) aims of the program; (2) policies and funding; (3) benefits and rewards; and (4) strategies and activities. The 21 items were grouped into two sections.

Section A consisted of 9 items that described the policies and funding of the program. The parameters used were (1) staff development benefits, (2) staff obligations; (3) activities permitted; (4) cost sharing; (5) source of funds; and (6) organizational reward system. Section B consisted of 12 items which described the strategies and activities used for implementation. The parameters used were (1) needs assessment; (2) goals of the program; (3) types of activities; (4) human resources used; and (5) involvement of external agencies.

For both sections of this part of the questionnaire, the respondents indicated, on a five-point scale, their perceptions of the extent to which the items applied to the staff development program at NAIT. The first point on the scale was used to identify those respondents who were uncertain of the extent that the items described the program. The remaining four points on the scale (never applies, seldom applies, generally applies, and always applies) were used to determine the extent to which respondents perceived the items to describe the program at NAIT. The "uncertain" responses were excluded from subsequent data analysis because they could not be depended upon for an accurate description of the program characteristics. Consequently, for analytical purposes, each item score in these two sections was reduced by one unit, resulting in a four-point scale.

The 21 items also provided the data for determining the balance in the orientation of the program between meeting institutional requirements and addressing individuals' personal needs. The orientation of the program was described in terms of three main characteristics: purpose, management control, and activities used.

Part III : Perceptions of Program Effectiveness. One purpose of this study was also to assess the effectiveness of the staff development program at NAIT as perceived by the academic staff. Hence, Part III of the survey questionnaire was designed to obtain the relevant data for that purpose. The selection of assessment dimensions and parameters was based on the review of research in the following areas: (1) organizational effectiveness; (2) program implementation; (3) perspectives of staff development; and (4) assessment of staff development programs.

Using the assessment model discussed in Chapter III, various dimensions and indicators were identified and organized as presented in Table 3.2, page 73. From the dimensions and indicators listed in the Table, 56 items were developed and structured into six sections. Section A had 8 items to assess the extent to which program definition and objectives were clear to the staff. Section B, also with 8 items, measured the extent to which input variables (leadership, resources, incentives, favourable climate) were present in the implementation of the program. The 10 items of section C were used to ascertain the types of activities and approaches used to implement the program.

Section D consisted of 14 items used for assessing staff perceptions of the outcomes of the program. Sections E and F had 8 items each and they were used to identify implementation factors. While Section E sought to identify factors that promoted the provision and implementation of staff development, Section F identified possible factors that obstructed implementation. For all items in this part of the questionnaire, the respondents indicated, on a five-point Likert scale, the degree to which they agreed an item represented a true statement or reflection of the program at NAIT.

D. Research Procedure and Administration of Questionnaire

When the research topic was identified a discussion was held with the Manager of Staff Training and Personnel Development at NAIT with regard to the potential benefits of the study and the feasibility of conducting the study at NAIT. Following the discussion, a five-page proposal that outlined the purpose and research approach was submitted to the officer after clearing with the supervisor of this study in the Department of Educational Administration, University of Alberta.

The five-page proposal was later discussed at a meeting with the Director of Research and Academic Development and the Manager of Staff Training, both officers at NAIT. While the two officers indicated their initial interest in the study, they advised that an approval to carry out the study at NAIT was to be given by the management of the Institute.

Permission and Formal Approval

The management gave approval to the study in principle, though it was not in writing initially. Nevertheless, the initial approval gave the investigator access to the Institute's documents on staff development. Also the Director of Research and Academic Development at NAIT was identified as the contact person for the study.

Following the initial contact made at NAIT, a formal application for permission was submitted through the Department of Field Services of the Faculty of Education, University of Alberta. Consequently, written permission was given by the management of NAIT and the study became an accepted project at both the University of Alberta and NAIT.

The Pilot Study

The draft questionnaire was tried in a pilot study. Respondents in the pilot study consisted of six instructors and four instructional supervisory staff from the target population, but were not part of the sample for the actual study (Tuckman, 1972:196). To achieve a representative sample for the pilot study and at the same time to ensure a high return rate in the pilot study, the selection of the individuals to participate was done in consultation with the Director at NAIT.

The respondents in the pilot study were requested to respond to all items as they understood them. In addition, they were invited to submit comments and suggestions for improving the questionnaire on a specially designed form as shown in Appendix A.4.3. Nine of the 10 questionnaires distributed in the pilot study were completed and returned with detailed and useful comments.

Use of the Pilot Study

The purpose of the pilot study included (1) to determine the clarity of the items, (2) to determine the distribution of responses to the items in order to examine the discriminable probability of the items, (3) to assess the comprehensiveness of the questionnaire, and (4) to

determine whether the items were meaningful in relation to the language of the organization (Tuckman, 1972:199; Lawler et al., 1980:332). Consequently, a number of changes were made to the questionnaire following the pilot study. First, one item that requested information about the control of budget for staff development was deleted because only one of the nine respondents answered the question. While three others did not respond to the item, another five stated they did not know. In this case, it was obvious that the staff were not aware of the budget control. This conclusion was confirmed in an interview with the Director of Research and Academic Development at NAIT.

Second, more items, one on student evaluation of instructors, the other on the "June in-service" at NAIT, were added as a result of suggestions made by respondents. Thus, the total number of items used in the actual survey was 90 instead of the 89 items used in the pilot study. Third, the responses to each item were carefully examined to ensure that all the respondents did not check the same number on the rating scale. Fourth, changes were made to the wording of some of the items that were commented upon by the respondents.

Validity of the questionnaire. The individual items on the questionnaire were designed to assess specific facts or opinions of the academic staff. Therefore, it was not possible to determine the construct validity since different sections of the instruments addressed different issues (Sax,1968:169). Similarly, statistical analysis could not be used to establish content validity because it was not possible to establish criteria for content analysis and comparison. Nevertheless, other approaches were used to ensure that the content of the instrument was valid for the study. These approaches included the use of interviews, the examination of documents, and the pilot study using respondents selected from the population but not included in the actual sample used for the study (Tuckman, 1972:199).

According to Morris and Fitz-Gibbon (1978:31) the four concerns of instrument validity for measuring program implementation are accuracy, relevance, representativeness, and completeness. For this study, the concerns of accuracy and relevance were addressed by the many inputs that were part of the development of the questionnaire. These were (1) discussion

with NAIT personnel, (2) examination of relevant documents, and (3) incorporation of comments and suggestions received in the pilot study. The concerns for representativeness and completeness were also addressed by the use of the stratified samples for both the pilot study and the main study, as well as by the many items (90 items) used in the questionnaire. In addition, individual items were examined mainly for clarity because Tuckman (1972:199) argues that "item analyses are not as critical for the refinement of questionnaires as they are for the refinement of tests . . . (and that) questionnaire items are usually reviewed for clarity and distribution of responses without necessarily running an item analysis."

Reliability. Time constraints (the Institute could not commit more time and instructors to the study because they had to prepare for the end of the academic year evaluation) could not permit the administration of the instrument twice. As a result, "test-retest" and "alternate form" methods for determining reliability were not possible (Sax,1968:158). The method of "split-half" reliability could not be used either because individual items measured different aspects of the staff development program. Commenting on such problems in connection with instrument reliability, Morris and Fitz-Gibbon (1978:138) argue that it is difficult to determine the reliability of implementation measures because of the problem of situational instability. In this respect, Lawler et al. (1980:322) observe that "reliability is a necessary, but not sufficient, condition for a measure (of organizational assessment) to be useful and valid."

Administration of the Questionnaire

The names of the individual members of the academic staff at NAIT, randomly selected to participate in the study, were written on removable self-stick pads. The pads were attached to copies of the questionnaire and then packed in envelopes according to departments. The envelopes belonging to the same instructional divisions were enclosed in one larger envelope.

The larger packages for the three divisions were delivered to the Director of Research and Academic Development who distributed them to the Deans of the divisions at a NAIT

Executive Council meeting. The Deans passed on the packages to the respective department chairmen as indicated on the envelopes. The department chairmen finally distributed the questionnaire to the individuals identified by names and programs on the removable stickers attached to the questionnaire.

A covering letter, attached to each copy of the questionnaire (Appendix A.4.1 and A.4.2), outlined the purpose of the study and the benefits to the Institute. The letter also directed that the completed questionnaire must be returned to the department chairmen who would forward them to the Director of Research and Academic Development. Thus all completed questionnaires were channelled through the Director to the investigator.

The procedure adopted to administer the questionnaire proved to be effective in two ways. First, the return rate of the completed questionnaire turned out to be reasonably high (73 percent), perhaps because the staff seemed to have associated the usefulness of the study with the involvement of management in the distribution of the questionnaire. Second, the procedure assured that copies of the questionnaire were delivered to the actual individuals included in the selected sample. In this respect, true representativeness of the sample, as randomly selected from the Institute's Calendar, was maintained. This condition of maintaining true representativeness was important because of the stratified sample design used for the study.

E. Treatment of the Data

The purpose of this study was to provide a profile of the perceptions of the academic staff at NAIT regarding the characteristics and effectiveness of their staff development program. Hence, the data were organized to address the following: (1) to provide data for comparing staff characteristics among the various sections of the Institute; (2) to describe the program as perceived by the various staff groups, in terms of the identified variables; and (3) to determine the effectiveness as perceived by the various staff groups.

Staff Characteristics

Part I of the questionnaire was used to collect data on staff characteristics including their position in the organization, instructional division, department, age, educational level, formal teacher education completed, teaching experience, work experience, and current participation in development activities. The analysis for this part of the data involved mostly descriptive statistics of frequencies and percentages. The characteristics of the staff were also compared across divisions and positions.

Program Characteristics

The data used for the description of the staff development program at NAIT were those obtained with Parts I and II of the survey questionnaire; from the interviews with the NAIT officers; and from the examination of documents. Section A of Part II of the questionnaire was used to describe the policies, funding, and rewards system of the program. Section B was used to describe the strategies and activities for implementation. The data analysis was carried out to determine:

1. the awareness of staff regarding the items used to describe the program;
2. to what extent the items used in the questionnaire described the program; and
3. the orientation of the program on the two perspectives: institutional and individual competence.

Awareness of aspects of the program. The responses to the 21 items of Part II were first classified into two categories: (1) uncertain that an item described the program; and (2) responses that rated the items on any of the remaining four responses of the scale. For each item, the number and percentage of respondents rating the item were reported for the total sample, staff positions and divisions. Chi-square analysis was used for determining significant differences among the groups.

Program characteristics. The characteristics of the program were described in terms of the responses of only those who rated the items described the program. That is, the

"uncertain" responses were excluded from the calculations of the mean scores for these items. This approach was adopted in the analysis because it was assumed that those who selected the item "uncertain" response were not sufficiently acquainted with that aspect of the program to rate its applicability to the NAIT program. It was felt the "uncertain" responses could not be depended upon as an accurate description of the program.

Hence, to determine the extent to which the items were perceived to describe the program, the scale values in Part II were recorded on the basis of the following numerical values: 1 = never applies; 2 = seldom applies; 3 = generally applies; and 4 = always applies. The mean scores, computed by excluding the "uncertain" responses, were called "Mean Awareness Scores (MAS)" and were used as indicators to describe the various aspects of the program.

An item with an MAS value of 2.50 and above (on a four-point scale) was generally considered to apply to the staff development program at NAIT. An item with an MAS value below 2.50 was rarely considered to apply to NAIT. The t-test analysis was used in determining significant differences in the MAS between the instructors and supervisors; analysis of variance was used in determining significant differences in the MAS among the divisions.

Program orientation. To determine the balance in the orientation of the program, between meeting institutional requirements and addressing individuals' personal needs, the responses of those who rated these 21 items (that is, excluding the "uncertain" responses) were factor analyzed. The factor analysis resulted in five factors which were used to describe the program orientation (pages 121 and 123). The five factors were (1) institution-focused; (2) voluntary participation; (3) personal development; (4) resource control; and (5) traditional practices. The orientation of the program on a factor was assessed by the MAS value of the items in the factor.

Program Effectiveness

The items in Part III of the survey questionnaire were used to collect data for assessing the effectiveness of the staff development program at NAIT as perceived by the academic staff. The program effectiveness was considered with respect to the following areas: approaches to staff development; outcomes of the program; factors affecting provision; and relationships between program effectiveness and input variables.

Approaches to staff development. Sections A, B, and C of Part III of the instrument, altogether 26 items, provided the data for assessing effectiveness of the approaches to staff development at NAIT. The response categories on the five-point Likert scale were assigned the following numerical values: 1 = completely disagree; 2 = mostly disagree; 3 = partly agree; 4 = mostly agree; and 5 = completely agree. Mean scores were calculated for the individual items. A mean numerical value of 3.50 or greater was considered to indicate that the respondents mostly agreed that such an approach was effective. A mean value between 2.50 and 3.50 indicated a partial agreement on the effectiveness of the approach, and a mean value below 2.50 indicated disagreement on the effectiveness of the approaches. The staff development approaches were assessed on six dimensions: (1) clarity of objectives; (2) needs assessment; (3) managerial practices; (4) organizational climate; (5) relevant and useful activities; and (6) achieving the objectives.

Program outcomes. The 14 items of section D of the questionnaire were used to examine staff perceptions regarding some of the outcomes of the program. Based on the five-point scale used in the questionnaire, a mean value of 3.50 and above was considered to indicate that the respondents mostly agreed the program had influenced the identified outcomes. A mean value between 2.50 and 3.50 indicated that the program partly influenced the identified outcomes, and a mean value below 2.50 indicated disagreement that the program had influenced outcomes.

Factors affecting implementation. Sections E and F, respectively, identified factors perceived to promote and impede the provision and implementation of the program. Using a

five-point scale, a mean value of 3.50 and above in both sections indicated that the respondents perceived the factor to have high effect on the implementation of staff development at NAIT. A mean value between 2.50 and 3.50 indicated a moderate while mean below 2.50 indicated that the factor had little effect.

Relationships among the study variables. To assess the strength and usefulness of the assessment model used in selecting variables for the study, the relationships among the program outcomes and the input variables were examined. The variables included in the examination of relationships were as follows: (1) the six dimensions used in assessing approaches; and (2) the fourteen measures of outcomes identified in Part III, section D of the questionnaire. Because the data for these variables were measured on interval scales and the purpose was merely to explore possible linear relationships between selected pairs of variables, the Pearson product-moment correlations were used for the analysis. The correlation coefficients provided a measure of the linear relationships between pairs of variables.

In addition, a multiple regression analysis was performed, using a forward-selection stepwise technique, in order to predict the major sources of variance that affected the outcomes. This technique allowed the independent variables (the six approaches) to be introduced into the computation sequentially depending upon their explanatory power (Nie et al., 1975:9).

Comparison of subgroups. A t-test analysis was carried out to determine significant differences between the responses of the instructors and the supervisors. A one-way analysis of variance was used to test for significant differences among the three instructional divisions.

The Open Ended Questions

In addition to the forced-choice items used in the questionnaire, the respondents were allowed to state three comments that they considered to be important regarding the staff development program at NAIT. These comments were coded to generate a number of items referring to various aspects of the program. The items generated were categorized into the six

dimensions used in assessing approaches to the program. Thus, by using frequency counts of the responses, staff comments from the open-ended questions provided additional information for assessing program effectiveness.

Summary

This Chapter described the population and selection of the sample. The sources of the data were identified. The chapter also presented the design and development of the survey questionnaire, including comments regarding the validity and reliability of the instrument. The final section of the Chapter outlined the procedures followed to administer the questionnaire and the various data analyses.

Chapter V

DESCRIPTION OF THE STAFF DEVELOPMENT PROGRAM AT NAIT

The purposes of this study were to describe the staff development program at NAIT and to assess the staff perceptions of the program effectiveness. This chapter deals with the first purpose. The first section presents the demographic variables of the respondents in relation to faculty participation in development activities. The second describes the program as perceived by the staff. In the third section, the orientation of the program is examined with the two-dimensional model presented in Chapter III.

A. Demographic Variables

To address the research question as to how the characteristics of the instructional staff affect the staff development program at NAIT, certain demographic variables of the respondents were examined. The factors considered in this part of the data analysis were (1) composition of the respondent group; (2) characteristics of the respondents; and (3) participation in continuing education.

Composition of the Respondent Group

Total responses. The responses to the questionnaire by the total sample, departments, staff positions and divisions are presented in Table 5.1. The table shows that 110 of the 150 questionnaires were completed and returned. This represented a return rate of 73 percent.

Departmental responses. Table 5.1 shows that the rate of return of the questionnaire was over 50 percent for thirteen of the 15 departments of the Institute. The two departments with rates of return below 50 percent were Health Sciences (44 percent) and Civil and Architectural Engineering (42 percent). In general, the rates of return of the questionnaire were highest among the departments of the Industrial division.

Table 5.1
Frequency Distribution of Responses to the Questionnaire
By Department, Division and Staff Positions

Department	Frequency of Responses to Questionnaire								
	Total Sent Out			Number of Returns			Percentage of Returns		
I. Business and Applied Arts Division									
	Supervisors	Instructors	Total	Supervisors	Instructors	Total	Supervisors	Instructors	Total
1. Business Administration	5	15	20	5	5	10	100	33	50
2. Applied Arts	3	5	8	2	4	6	67	80	75
3. Food Services	2	4	6	2	3	5	100	75	83
4. Health Sciences	3	6	9	2	2	4	67	33	44
5. Medical Sciences	2	5	7	1	3	4	50	60	57
Total Division	15	35	50	12	17	29	80	49	58
II. Industrial Division									
	Supervisors	Instructors	Total	Supervisors	Instructors	Total	Supervisors	Instructors	Total
6. Auto-Diesel	4	7	11	4	7	11	100	100	100
7. Construction	2	6	8	0	6	6	0	100	75
8. Electrical	2	7	9	2	7	9	100	100	100
9. Mechanical	4	13	17	4	13	17	100	100	100
10. Related Subjects	1	4	5	1	4	5	100	100	100
Total Division	13	37	50	11	37	48	85	100	96
III. Engineering Technology Division									
	Supervisors	Instructors	Total	Supervisors	Instructors	Total	Supervisors	Instructors	Total
11. Academic Studies	3	7	10	2	3	5	67	43	50
12. Civil & Architecture	3	9	12	3	2	5	100	22	42
13. Electronics	5	12	17	5	9	14	100	75	82
14. Mechanical Engineering	2	2	4	2	1	3	100	50	75
15. Resource Technology	3	4	7	3	3	6	100	75	86
Total Division	16	34	50	15	18	33	94	53	66
TOTAL SAMPLE	44	106	150	38	72	110	86	68	73

Representation by positions. The data presented in Table 5.1 show that while 86 percent of the instructional supervisors responded to the questionnaire, only 68 percent of the instructors completed the questionnaire. A further examination of the percentage distribution of responses showed that while the proportion of supervisors was fairly evenly distributed among the three divisions (between 80 and 94 percent), that was not the case for the instructors (between 49 and 100 percent). That is, all the instructors (100 percent) of the Industrial division responded to the questionnaire, but only 53 percent responded from the Engineering Technology division and 49 percent responded from the Business and Applied Arts division.

Divisional responses. Table 5.2 presents the distribution of the respondents for the three principal instructional divisions at NAIT. This table shows that the respondents consisted of 26 percent from the Business and Applied division, 44 percent from the Industrial division and 30 percent from the Engineering Technology division.

Table 5.2
Distribution of Respondents According to
Divisions and Staff Positions

	Instructors		Supervisors		Total	
Division	N	%	N	%	N	%
Bus & Ap Arts	17	23.6	12	31.6	29	26.4
Industrial	37	51.4	11	28.9	48	43.6
Technology	18	25.0	15	39.5	33	30.0
Total	72	100.0	38	100.0	110	100.0

Discussion on the Respondent Group

For the purpose of comparing the interest and perceptions of the different groups of instructional staff at NAIT, a stratified sample was used. The composition of the sample, as presented in Tables 5.1 and 5.2, indicates that all the subgroups were represented. In this case, it is possible to generalize some of the findings of the study to the population of the instructional staff at NAIT. For example, the ratio of responses between the supervisory

subgroup (38 respondents) and the instructors' subgroup (72 respondents) is close to the original sample ratio of one to two; so that comparison between the two groups can be made. The data also showed that there were nine females in the sample representing 8 percent. Although the sex variable was not controlled in this study, the result does not differ too greatly from the population figure of 14 percent female in the total academic staff at NAIT (NAIT, A Profile, 1984:6).

Rate of return by total sample. The rate of return of the questionnaire by the total sample (more than 73 percent) indicates that the concern shown by faculty for staff development is encouraging. However, the rate of return does not necessarily reflect the interest of the total staff. An indepth study of the data revealed that the rate of return was not the same across different groups. In this case, the return rate cannot be explained only by staff interest. The other explanation can be attributed to greater staff awareness because of the Institute's induction program (the August in-service program) which is an employment requirement for all newly recruited instructors.

Variations in the subgroups. The return of the questionnaire by each of the three principal divisions was 58 percent or more (Table 5.1), however, there were some important variations in the responses that seem to have implications for the groups' interest and the planning of staff development at NAIT. The return rate of the Industrial division was substantially higher (96 percent) as compared to the other two divisions -- the Business and Applied Arts division (58 percent) and the Engineering Technology division (66 percent). Two explanations may be proposed.

First, the way the different divisions handled the questionnaire could be a factor. In the case of the Industrial division, the completed questionnaires were collected at the departmental level, whereas for the other two divisions, individuals returned completed questionnaires directly to the office of the Director of Research and Academic Development at NAIT. Thus, the expectations set by the Industrial division seem to have been higher than in the remaining two divisions.

Second, the variations in the return rates tend to support the findings reported in other studies and, which seem to be confirmed by this study, that the interest and participation in staff development at technical institutes are not the same across subject areas. For example, Chesley (1983:62A) concluded from his study that "the community college faculty is not a psychologically homogenous group . . . and that this is an important factor that should benefit those responsible for faculty development when designing programs." Fordham and Ainley (1980:60) also found that interest and participation in development activities was rather low for staff in the fields of business studies and general studies. In this study, the departments that showed the least interest in responding to the questionnaire included the Business Administration, Health Services, Academic Studies, and Civil and Architecture (Table 5.1).

Characteristics of the Instructional Staff

The characteristics of staff considered for examination in this study were age, educational qualifications and work experience.

Age categories. According to Table 5.3 the instructional staff in the sample fell into three age categories. Thirty-five of them, or 33 percent, were in the 30 to 40 years category; 46, or 43 percent, in the 41 to 50 years category; and the remaining 26, or 24 percent, were over 50 years of age.

Table 5.3
Distribution of Age Categories of the Respondents
According to Staff Positions

	Instructors		Supervisors		Total	
Age Category	N	%	N	%	N	%
30 - 40 years	27	37.5	8	22.9	35	32.8
41 - 50	31	43.1	15	42.9	46	43.0
Over 50	14	19.4	12	34.4	26	24.2
Total	72	100.0	35	100.0	107	100.0

Educational qualifications. Presented in Table 5.4 are the educational qualifications reported by the respondents. The Table shows that 45 instructional staff, or 42 percent of the 108 respondents who reported their educational qualifications, held the journeyman certificates in the various trades. The qualifications of the remaining 58 percent were distributed as follows: 9 percent college diplomas; 32 percent bachelor degrees; 2 percent graduate diplomas; and 16 percent graduate degrees. The graduate degrees were mainly master's degrees in a variety of fields of studies with one doctorate degree.

Table 5.4 also shows that the distribution of educational qualifications within the supervisory and instructors' subgroups differed. Whereas 53 percent of the instructors reported having journeyman certificates as their highest qualifications, less than 20 percent of the supervisors had these as their highest qualifications. According to Tables B.5.1 and B.5.8 in the Appendix, the staff of both the Business and Applied Arts and the Engineering Technology divisions had much higher qualifications than did the staff of the Industrial division.

Table 5.4
Distribution of Educational Qualifications
According to Staff Positions

	Instructors		Supervisors		Total	
Qualification	N	%	N	%	N	%
Journeyman	38	52.8	7	19.4	45	41.7
College Diploma	8	11.1	2	5.6	10	9.3
Bachelor Degree	17	23.6	17	47.2	34	31.5
Graduate Diploma	1	1.4	1	2.8	2	1.9
Graduate Degree	8	11.1	9	25.0	17	15.7
Total	27	100.0	36	100.0	108	100.0

Teacher education completed. The type of teacher education completed by the respondents is presented in Table 5.5. Of the 102 who responded to the item, 77 percent had only completed the NAIT in-service program and another 13 percent had the Bachelor of Education degree. Whereas only two percent reported having graduate diplomas in education

studies, five percent reported the Master of Education degree. Another four percent indicated they had other teachers' certificates, but they did not specify.

Table 5.5
Teacher Education Completed by the Respondents According to Staff Positions

Teacher Education Program	Instructors		Supervisors		Total	
	N	%	N	%	N	%
NAIT In-Service	55	80.9	23	67.6	78	76.5
B. Ed.	9	13.2	4	11.8	13	12.7
Grad Dip	1	1.5	1	3.0	2	2.0
M. Ed.	2	2.9	3	8.8	5	4.9
Other (Cert)	1	1.5	3	8.8	4	3.9
Total	68	100.0	34	100.0	102	100.0

Length of service at NAIT. Table 5.6 presents the length of service at NAIT reported by the respondents. While 19 percent indicated 3 to 5 years service, 28 percent had between 6 to 10 years service at NAIT. It was found that more than 52 percent of the total respondents had 10 years or longer service at NAIT. The Table also shows that 89 percent of the supervisors had worked at NAIT for ten years or more. In comparison, only 33 percent of the instructors had a similar length of service.

Table 5.6
Length of Service at NAIT According to Staff Positions

Years of Service at NAIT	Instructors		Supervisors		Total	
	N	%	N	%	N	%
3 - 5 years	19	26.4	2	5.4	21	19.3
6 - 10	29	40.3	2	5.4	31	28.4
Over 10	24	33.3	33	89.2	57	52.3
Total	72	100.0	37	100.0	109	100.0

Relevant work experience. Only four percent of the respondents (Table 5.7) reported that they had not worked in a job related to the courses they were teaching. The following durations of related experiences were indicated by others: 4 percent had less than one year; 2 percent had one to two years; 17 percent had 3 to 5 years; and as much as 74 percent had over 5 years work-related experience prior to employment at NAIT.

Whereas 81 percent of the instructors reported more than 5 years work-related experience, 62 percent of the supervisors reported similar experience. Table B.5.7 in the Appendix shows that 94 percent of the staff of the Industrial division reported over 5 years work-related experience. In comparison, 68 percent and 52 percent of the Business and Applied Arts division and the Engineering Technology division respectively reported over 5 years work-related experience. The results of the analysis of variance (Table B.5.12 in the Appendix) shows that the work-related experience of the Industrial division was significantly higher than that of the other two divisions.

Table 5.7
Length of Related Work Experience According to Staff Positions

Length of Work Experience	Instructors		Supervisors		Total	
	N	%	N	%	N	%
Nil	2	2.8	2	5.4	4	3.7
Under one year	3	4.2	1	2.7	4	3.7
1 - 2 years	1	1.4	1	2.7	2	1.8
3 - 5	8	11.0	10	27.0	18	16.5
Over 5	58	80.6	23	62.2	81	74.3
Total	72	100.0	37	100.0	109	100.0

Discussion of Staff Characteristics

Qualifications. The qualifications and experiences reported by the respondents tend to confirm the Institute's principle of using one's knowledge in subject matter and previous experience as criteria for the employment of instructional staff. The results also suggest that the August in-service at NAIT was the main pedagogical training relied on by most

instructional staff. This was true for all three divisions (Table B.5.2 in the Appendix). Two speculations are possible here. First, the rewards and benefits of staff development efforts may not be clear to the staff. Second, those who seek further educational qualifications, seem to do that in order to acquire university degrees which they associate with higher salary at NAIT. The latter may account for the high involvement in formal continuing educational programs by the instructors as a group and also by the staff of the Industrial division (Tables 5.8 on page 101 and B.5. 3 in the Appendix).

Length of service. In this study, the average age of the respondents was found to be between 41 and 45 years. It was also found that below 20 percent of the respondents had less than five years length of service at NAIT (Table 5.6). In fact, more than 50 percent of the respondents reported ten years or more service at NAIT. These two findings, which are related to age and long service at NAIT, suggest two areas for reassessment of staff development needs. One is that most of the staff appear to have completed their formal training some years ago, suggesting the need to upgrade their knowledge in their special fields. The other concerns the rapid technological changes. Hence, as suggested by Fordham and Ainley (1980:18), it is necessary to design development programs that assist staff in maintaining an ongoing knowledge of their technologies. The suggestion implies a program that will encourage staff to go periodically to industries to become acquainted with changes in technology.

Participation in Continuing Education

Enrolment in continuing education. Table 5.8 shows that as many as 76 respondents or 70 percent reported they were not involved in any formal continuing education programs. Of the remaining 30 percent enrolled in formal continuing education, 6 percent were enrolled in college programs, 18 percent in bachelor's degree programs and 6 percent in graduate programs at the university. Eighteen of the 20 bachelor's degree programs and all of the graduate programs, reported by the respondents, were in Faculties of Education.

Educational leave. Table 5.9 presents the leave of absence granted to the respondents for educational purposes. Seventy-four or 68 percent of the 109 respondents reported they had not been granted educational leave since they were first employed by NAIT. The durations of leave of absence reported by the remaining 35 or 32 percent varied from a few weeks to as long as twelve months. Less than 6 percent of the total respondents reported more than 12 months leave for educational purposes. As many as 82 percent of the instructors reported that they had not been granted educational leave. In comparison, the percentage of supervisors that reported they had not been granted educational leave was only fifty.

Table 5.8
Enrolment in Formal Continuing Education by the Respondents According to Staff Positions

Continuing Education Program	Instructors		Supervisors		Total	
	N	%	N	%	N	%
None	48	66.7	28	75.7	76	69.7
College program	4	5.6	2	5.4	6	5.5
Bachelor's program	16	22.2	4	10.8	20	18.3
Graduate program	4	5.6	3	8.1	7	6.4
Total	72	100.0	37	100.0	109	100.0

NOTE : Twenty-five of the 27 degree programs are in education studies.

Table 5.9
Leave of Absence Granted to the Respondents for Educational Purposes According to Staff Positions

Duration of Leave	Instructors		Supervisors		Total	
	N	%	N	%	N	%
Nil	59	81.9	15	50.3	74	67.9
Under one month	1	1.4	1	2.7	2	1.8
1 - 5 months	2	2.8	5	13.5	7	6.4
6 - 12 months	9	12.5	11	29.7	20	18.3
Over 12 months	1	1.4	5	13.5	6	5.5
Total	72	100.0	37	100.0	109	100.0

Industrial experience leave. The data in Table 5.10 show that a total of 85 instructional staff or 78 percent of the respondents reported they had never been granted leave of absence for industrial experience or activities. Durations of industrial leave reported by the remaining 24 respondents ranged from one month to more than twelve months. Below 3 percent of the respondents reported over 12 months industrial leave. The data show that 82 percent of the instructors indicated they had not participated in this type of development activities. For the supervisors, 70 percent had not participated in these activities, but they reported longer durations (6 months or more) than did the instructors.

Table 5.10
Leave of Absence Granted to the Respondents for Industrial Purposes According to Staff Positions

	Instructors		Supervisors		Total	
Duration of Leave	N	%	N	%	N	%
Nil	59	82.0	26	70.3	85	78.0
Under one month	3	4.2	3	8.1	6	5.5
1 - 5 months	6	8.3	3	8.1	9	8.2
6 - 12 months	3	4.2	3	8.1	6	5.5
Over 12 months	1	1.3	2	5.4	3	2.8
Total	72	100.0	37	100.0	109	100.0

Discussion of Participation in Continuing Education

About 30 percent of all the respondents reported that they were involved in formal continuing education. This level of faculty participation in development activities appears encouraging for the Institute as a whole. However, a further analysis of the data showed that as many as 21 of the 33 staff (64 percent) involved in the formal continuing education were from the Industrial division (Table B.5.3 in the Appendix). The remaining twelve respondents were distributed between the other two divisions as follows: five from the Businsess and Applied Arts division and seven from the Engineering Technology division.

It is important to note that more staff of the Industrial division, which offers programs in the traditional trades such as automotive, building construction, power transmission and machine shop work, were more involved in continuing education. The technology in these traditional trades tends to be relatively stable and generally slow to change. In contrast, relatively fewer staff of the other two divisions participated in continuing education, even though these divisions offer programs in such fields as electronics, computer sciences and medical sciences where, according to Fordham and Ainley (1980:18), the effects of technology changes are greatest. In this respect, the higher level of participation found among the staff of the Industrial division tends to corroborate other research evidence that faculty members most involved in development activities tend to be those who want to improve themselves rather than those who generally require regular upgrading in their fields (Konrad, 1983:22).

However, further study of the data suggests that differences in the level of educational qualifications also tend to affect faculty participation in development activities. The data revealed that the level of educational qualifications of the staff reflected the courses offered by the divisions. The staff in the divisions that offered trade courses tended to have journeyman certificates as their highest qualifications, while those of the divisions that offered technological courses tended to have university degrees. Therefore, the current level of educational qualifications of the staff of the Industrial division may explain their higher involvement in university upgrading. As reported in Table 5.8 on page 101, 22 of the 27 staff involved in university degree programs were enrolled in Faculties of Education. It was also found that 15 of the 20 staff pursuing the bachelor's degree programs were in Faculties of Education. In view of the above evidence, it may be concluded that the participation of the staff in continuing education was more of a desire to meet individual personal needs than to improve the organization as a whole. In this case, it was the desire to obtain university degrees which were associated with higher economic benefits, rather than with technological updating which would enhance teaching in the trades.

B. Characteristics of the Staff Development Program

In this section, the aim is to answer the research question: what are the main characteristics of the staff development program at NAIT? To answer the main question, data are presented to address the following specific questions: (1) which categories of the instructional staff show awareness of the various aspects of the program; (2) what aims are emphasized in the program; (3) which policies and funding strategies are used to promote the program; (4) what benefits and rewards are provided for staff participation; and (5) which approaches and activities are used to implement the program? The data used to answer the above questions were derived from the responses to the 21 items of Part II of the questionnaire.

Staff Showing Awareness of Program Characteristics

As previously indicated in the methodology in Chapter 4 on page 87, the responses to the 21 items on this part of the questionnaire were dichotomized into two categories: (1) the "uncertain" responses (considered as unawareness); and (2) the responses on the remaining four points of the scales (considered as indicating awareness). Two reasons prompted this approach. First, the uncertain or unawareness responses were excluded from the calculation of mean scores used to describe the program in order to improve the accuracy of the description. Second, the dichotomy provided information for comparing groups that showed awareness of various aspects of the program.

Comparisons of the groups' awareness are presented in Tables B.5.14 and B.5.15 in the Appendix. From Table B.5.14, the chi-square analysis shows a significant difference between the supervisors and the instructors regarding policy and funding issues such as allocation of funds and cost sharing. Other aspects of the program where the supervisors showed more awareness than the instructors were related to (1) the role and involvement of the instructional departments; and (2) the use of the expertise of the individual staff members.

Among the three instructional divisions, no significant differences were found regarding the level of awareness of program characteristics with the exception of policy issues. This exception related to the policy that placed the obligation of professional development on individual staff members. According to the data, staff of the Industrial division showed more awareness in this area than the staff of the other two divisions, and this can be explained in terms of the differences in the groups' educational qualifications. Because the staff of the Industrial division had a comparatively lower level of academic education, they believed it was their responsibility to improve themselves.

It may be concluded from the above observations that two factors that tended to affect faculty awareness and interest in staff development were one's position in the organization and one's educational qualifications. Staff in supervisory positions and those with lower educational qualifications tended to show more awareness and interest than those with higher qualifications or lower positions in the organizational structure. The reasons for the interest shown by the supervisory staff may relate to organizational performance and those of the individuals with lower qualifications may relate to both social and economic factors.

Description of Specific Aspects of the Program

Based on the argument that the "uncertain" responses could not be depended on for accurate description of the program, they were excluded from the calculations of the mean scores which were used to describe the various aspects of the program.

Mean of awareness scores (MAS) as descriptive indicator. In view of the reasons presented above and the detailed explanations given in Chapter 4, the extent to which the items described the program was measured by the mean scores calculated on the basis of the following numerical values assigned to the remaining four response categories: 1 = never applies; 2 = seldom applies; 3 = generally applies; and 4 = always applies.

The mean score, computed by excluding the "uncertain" responses, was called the "Mean Awareness Score (MAS)" and was used as an indicator for describing the following

characteristics of the program: aims, policies, benefits, and activities. Hence, on this four-point scale, an MAS value of 2.50 and above for an item, was considered to indicate that the respondents generally perceived the item to apply to that aspect of the program. An item with an MAS value below 2.50 was considered to indicate that it rarely applied to the characteristics of the program. Table 5.11 shows, according to the four main characteristics, the percentage of instructors, supervisors and total respondents indicating awareness of the 21 items; the mean of responses to the items; and the rank order of the means. The corresponding data for the three instructional divisions are reported in Table 5.12. The findings are presented below.

Aims of the program. As shown in Table 5.11, more than 70 percent of the total respondents reported awareness of the two items (items 5 and 15) describing the aims of the program. Also the MAS values for the two items were above 2.50, indicating that both objectives were perceived as characteristics of the program. But the ranking of the 21 items suggested that the aim related to knowledge and skills development was more emphasized (the rank of item 15 was 4.5) than the aim addressing personal development (item 5 was ranked 15). Both Tables 5.11 and 5.12 show that there were no significant differences among the subgroups regarding their perceptions of the two items.

Policies and funding. According to Table 5.11, between 70 and 79 percent of the total respondents indicated they were aware that four of the 5 items, dealing with issues of policies and funding, described the program. These four (items 2, 3, 4, 7) concerned policies of released time and cost sharing. In comparison, only 51 percent indicated they were aware of the fifth item (item 6) concerning allocation of program funds. However, the MAS for all five items were above 2.50 (from 2.92 to 3.17). In addition, the items ranked high, suggesting that the respondents were not only very much aware of such policies, but they also perceived them all to describe generally the characteristics of the program.

Chi-square analysis (Table B.5.14 in the Appendix), for comparing the groups, showed that the percentage of supervisors indicating awareness of items 6 and 7 was significantly higher

Table 5.11
Items for Describing the Staff Development Program at NAIT
According to Staff Positions

Item No.	Aspects Described by Item	Instructors (1) (N = 72) % Aware	MAS	Rank	Supervisors (2) (N = 37) % Aware	MAS	Rank	Total (N = 109) % Aware	MAS	Rank	t-test Value	Sig of Means
	I. Aim of Program											
5.	Policies specify personal improvement	63.9	2.63	15	81.1	2.83	12	69.7	2.71	15	1.14	N.S.
15.	Develops knowledge, skills and attitudes	73.6	2.94	4	89.2	2.97	9	78.9	2.95	4.5	0.18	N.S.
	II. Policies and Funding											
2.	Policies specify time release	75.0	3.07	2	86.5	3.16	2	78.9	3.11	2	0.55	N.S.
3.	Policies describe cost sharing	70.8	3.06	3	81.1	3.07	3	74.3	3.06	3	0.04	N.S.
4.	Policies specify individual obligation	66.7	2.88	6	81.1	3.00	8	71.6	2.92	6.5	0.63	N.S.
6.	Funds are allocated to departments	38.9	2.75	12	75.7	3.13	3	51.3	2.95	4.5	1.58	N.S.
7.	Individuals bear continiuing education cost	72.2	3.12	1	91.9	3.26	1	79.9	3.17	1	0.90	N.S.

Table 5.11 (continued)

Item No.	Aspects Described by Item	Instructors (1) (N = 72) % Aware	MAS	Rank	Supervisors (2) (N = 37) % Aware	MAS	Rank	Total (N = 109) % Aware	MAS	Rank	t-test Value	Sig of Means
	III. Benefits and Rewards											
1.	Policies describe benefits	63.9	2.89	5	75.7	2.75	14	67.8	2.83	9	0.89	N.S.
8.	Salary increases are used as reward	80.6	2.71	13	81.1	3.03	6.5	80.7	2.81	10.5	2.23*	2 > 1
9.	Promotions are used as reward	68.1	2.24	19	73.0	2.52	18	69.7	2.34	18	1.75	N.S.
	IV. Strategies and Activities											
10.	Needs are determined by management	75.0	2.78	9.5	83.3	2.68	16	78.0	2.74	12.5	0.58	N.S.
11.	Staff development unit assist individuals	76.4	2.25	18	78.4	2.32	19	77.1	2.28	19	0.36	N.S.
12.	Program heads assist individual staff	94.4	2.84	7	100	3.03	6.5	96.3	2.91	8	1.20	N.S.
13.	Departments determine their needs	70.8	2.78	9.5	89.2	3.12	4	77.1	2.92	6.5	2.01*	2 > 1
14.	Expertise of the staff members is tapped	69.4	2.76	11	91.9	2.71	15	77.1	2.74	12.5	0.35	N.S.

Table 5.11 (continued)

Item No.	Aspects Described by Item	Instructors (1) (N = 72) % Aware	MAS	Rank	Supervisors (2) (N = 37) % Aware	MAS	Rank	Total (N = 109) % Aware	MAS	Rank	t-test Value	Sig of Means
	Strategies and Activities (continuation)											
16.	Activities are organized within the Institute	93.1	2.79	8	94.6	2.86	11	93.6	2.81	10.5	0.47	N.S.
17.	Departments review their programs	95.8	2.67	14	94.6	2.89	10	95.4	2.72	14	1.20	N.S.
18.	Staff report on conference attendance	93.1	2.49	16	100	2.81	13	95.4	2.61	16	1.67	N.S.
19.	Instructors attend other instructors' classes	93.1	2.00	20	97.3	2.28	20	94.5	2.09	20	1.85	N.S.
20.	University personnel participate in workshops	69.4	1.90	21	75.7	2.07	21	71.7	1.96	21	0.95	N.S.
21.	Industry personnel participate in workshops	86.1	2.34	17	91.9	2.59	17	88.1	2.43	17	1.42	N.S.

• Significant at .05 level

Table 5.12
Items for Describing the Staff Development Program at NAIT
According to Instructional Divisions

Item No.	Aspects Described by Item	Bus & App Arts (1) (N = 28)			Industrial (2) (N = 48)			Eng. Tech (3) (N = 33)				
		% Aware	MAS	Rank	% Aware	MAS	Rank	% Aware	MAS	Rank	F-Ratio	Sig of Means
	I. Aim of Program											
5.	Policies specify personal improvement	67.9	2.53	17	70.8	2.82	11	69.7	2.70	12	.93	N.S.
15.	Develops knowledge, skills and attitudes	78.6	3.09	4	85.4	3.00	5	69.7	2.74	10.5	1.79	N.S.
	II. Policies and Funding											
2.	Policies specify time release	82.1	3.08	5	79.2	3.05	2.5	75.8	3.20	2	.37	N.S.
3.	Policies describe cost sharing	64.3	3.11	3	79.2	3.05	2.5	75.8	3.04	4	.05	N.S.
4.	Policies specify individual obligation	57.1	3.06	6	83.3	2.85	9	66.7	2.95	5	.37	N.S.
6.	Funds are allocated to departments	42.9	2.75	13	54.2	2.84	10	54.5	3.22	1	1.19	N.S.
7.	Individuals bear continiuing education cost	82.1	3.22	1	77.1	3.21	1	78.8	3.08	3	.31	N.S.

Table 5.12 (continued)

Item No.	Aspects Described by Item	Bus & App Arts (1) (N = 28) % Aware	MAS	Rank	Industrial (2) (N = 48) % Aware	MAS	Rank	Eng. Tech (3) (N = 33) % Aware	MAS	Rank	F-Ratio	Sig of Means
	III. Benefits and Rewards											
1.	Policies describe benefits	60.7	2.88	9	75.0	2.78	12.5	63.6	2.90	6	.29	N.S.
8.	Salary increases are used as reward	71.4	2.65	16	87.5	3.02	4	78.8	2.62	14	2.31	N.S.
9.	Promotions are used as reward	71.4	2.30	19	66.7	2.50	17	72.7	2.17	18	1.38	N.S.
	IV. Strategies and Activities											
10.	Needs are determined by management	82.1	2.74	14.5	75.0	2.78	12.5	78.4	2.69	13	.09	N.S.
11.	Staff development unit assist individuals	75.0	2.48	18	79.2	2.41	18	75.8	1.92	20	3.86*	3 - 1, 2
12.	Program heads assist individual staff	96.4	2.92	8	95.8	2.91	6.5	97.0	2.87	7.5	.03	N.S.
13.	Departments determine their needs	82.1	3.13	2	70.8	2.91	6.5	81.8	2.74	10.5	1.64	N.S.
14.	Expertise of the staff members is tapped	82.1	2.78	12	72.9	2.86	8	78.8	2.54	15	1.65	N.S.

Table 5.12 (continued)

Item No.	Aspects Described by Item	Bus & App Arts (1) (N = 28) % Aware	MAS	Rank	Industrial (2) (N = 48) % Aware	MAS	Rank	Eng. Tech (3) (N = 33) % Aware	MAS	Rank	F-Ratio	Sig of Means
	Strategies and Activities (contunuation)											
16.	Activities are organized within the Institute	92.9	2.96	7	93.6	2.76	14	93.9	2.77	9	.85	N.S.
17.	Departments review their programs	96.4	2.81	10	97.9	2.57	16	90.9	2.87	7.5	.94	N.S.
18.	Staff report on conference attendance	96.4	2.74	14.5	93.8	2.60	15	97.0	2.50	16	.48	N.S.
19.	Instructors attend other instructors' classes	96.4	2.04	20	95.8	2.09	20	90.9	2.16	19	.23	N.S.
20.	University personnel participate in workshops	64.3	2.00	21	66.7	2.03	21	84.8	1.86	21	.41	N.S.
21.	Industry personnel participate in workshops	85.7	2.79	11	85.4	2.36	19	93.9	2.23	17	3.51•	1 > 3

• Significant at .05 level

than that of instructors. The two items described sources of funds. However, the comparison of the means (Tables 5.11 and 5.12) showed no significant differences between the supervisors and instructors, nor among the instructional divisions for any of the five items. These findings suggested that the supervisors appear to be more informed about funding policies than are the instructors because of the former's higher positions in the organization.

Benefits and rewards. Three items were used to describe these issues as shown in Tables 5.11. While 81 percent of all the respondents indicated they were aware salary was used as a reward (item 8), only 70 percent thought that promotion was also used as a reward (item 9) at NAIT. The percentage indicating awareness of item 1 (policies describe benefits) was still smaller, 68 percent. The MAS for items 1 and 8 were above 2.50, but that of item 9 was below 2.50. This evidence suggests that whereas salary increases were perceived generally as a reward for instructor development, promotions were not perceived to be so. It also suggests that members of staff appeared to be well informed about policies regarding financial rewards than non-monetary rewards and benefits. According to Tables 5.11 and 5.12, no significant differences were found among the subgroups.

Strategies and activities. Table 5.11 shows that, with the exception of item 20 (university personnel participate in workshops), 77 percent or more respondents indicated awareness of the other ten items used in describing program strategies and activities. Only 72 percent indicated awareness of item 20 which also had the lowest MAS value of 1.96 and a rank of 21. Seven items (10, 12, 13, 14, 16, 17, 18), dealing with formal activities, had MAS values above 2.50, indicating they described the general characteristics of the program. Three of the seven items (12, 13, 16), that specifically referred to Institute-focused activities such as departmental involvement, received the highest MAS values of above 2.80. The remaining three of the 11 items (11, 19, 21), related to informal approaches, received MAS below 2.50, and they also ranked very low (from 17 to 20). That is, informal approaches were rarely used on the program.

The chi-square analysis (Table B.5.12) showed that the percentage of supervisors indicating awareness of the formal and Institute-focused activities (items 12 and 13) was significantly higher than the percentage of instructors. A significant difference was also found between the means of supervisors and instructors for item 13 (departments determine needs). These results suggest that the supervisors appeared to know more about the role of the instructional departments in the instructor development efforts than the instructors. In addition, Table 5.12 shows significant differences among the three instructional divisions regarding two items (items 11 and 21) that described informal implementation strategies. For item 11 (staff development unit assists individuals), the MAS value of the Engineering Technology division was significantly lower than that of the other two divisions. In the case of item 21 (personnel from industries participate in workshops), the MAS value of the Business and Applied Arts division was significantly greater than that of the Engineering Technology division.

The significant differences reported above suggest that staff perceptions of the use of informal approaches reflected not only one's position in the organization, but also one's educational qualifications and the field of specialization. In this respect, it seemed the supervisors and the staff of the Business and Applied Arts division knew more about the informal approaches used on the program than the other subgroups, especially the Engineering Technology division.

Rank Order of the Items. The mean scores of the 21 items used for describing the characteristics of the program were ranked in order and the Spearman rank order correlation coefficients (rho) were computed to determine whether any differences existed in the ranking of the items by the different groups. The results are presented in Table 5.13 and they show that the values of rho were all significant at the .01 level. That is, the subgroups substantially agreed in the ranking of the items. All the subgroups rated the items on policies and funding as frequently applying and rated the items describing strategies and activities as infrequently applying. In the case of item 6 (funds are allocated to departments), however, the supervisors

rated the item third and the instructors rated it twelfth. The chi-square analysis also showed a statistical difference in the percentage of awareness between the two groups for the item. Such a finding suggested that staff positions at NAIT appeared to be a factor in determining the nature and amount of information on staff development that a faculty member had.

Table 5.13
Spearman Rank Order Correlation Coefficients Between Subgroups For the Items Used in Describing the Program

No.	Subgroups compared	Value of Rho
1.	Instructors and Supervisors	.76**
2.	Business and Applied Arts and Industrial divisions	.73**
3.	Business and Applied Arts and Engineering Technology divisions	.76**
4.	Industrial and Engineering Technology divisions	.69**

** Significant beyond .01 level

Discussion of Program Characteristics

Aim of the program. The evidence indicated that more instructional staff considered the aim of the program as enabling them to develop necessary knowledge, skills and attitudes for their work. In comparison, a relatively smaller number of staff seemed to consider the aim of the program as helping the individual staff members to improve themselves. This finding suggests that the instructional staff tend to view the primary objective of the program as management efforts to meet the Institute's requirements. As a result, the objective for addressing individual personal needs is perceived to be secondary.

Policies and funding. The findings of this study indicate that the respondents, as a whole, appear to know more about matters concerning cost sharing policies than they know about matters dealing with sources of funds for the program. This finding may be explained by

evidence that, in recent years, postsecondary institutions seem to be giving increased attention to policies on staff development (Collin, 1977:140; Centra, 1978b:160; Konrad, 1983:24; and Adkins, 1983:24A).

The Institute's records show that regulations governing staff development were first introduced in 1972 (In-Service Program File, 2A6, 1972). However, the substance of the regulations has improved over the years and some aspects have now been worked into the academic staff collective agreement (Collective Agreement, 1984-86 : Sections 18, 25, 31, 36). In this respect, it was not surprising to find that the policies which appear to be well known to the staff deal with contracts relating to matters of cost sharing and released time for participating in professional development activities. For example, according to Tables 5.11 and 5.12 on pages 107 and 110 respectively, it was very clear among all the subgroups that the costs for undertaking part-time studies at the universities and other educational institutions are individual members' responsibilities.

It is evident from this study, as well as the one reported by Bailey (1983:757A), that the supervisors appear to be better informed of financial policies and resources for individualized development activities than are the faculty members. The Institute's documents further indicate that two main sources for funding the program are from (1) institutional budget and (2) the individuals' personal contribution (Collective Agreement, 1984-86). Finally, it appears that the cost elements of staff development at NAIT are denoted by: (1) leave with pay; (2) leave without pay; (3) tuition fee for some Institute's courses; (4) released time; (5) fees for membership of professional associations; and (6) maintenance of benefits while on study leave (Collective Agreement, 1984-86: Sections 25, 26, 35, 36).

Benefits and rewards. While most of the respondents indicated that salary appeared to be a reward for staff development efforts, they did not see promotion to be so. Several speculations may explain this finding. The data, reported in Tables 5.4 and 5.6 on pages 97 and 98, suggest that staff positions are positively related to both educational qualifications and length of service at NAIT. However, it also appears that the salary structure at NAIT is

attached closely to both educational qualifications and length of service. As a result of these complex relationships among the three variables -- salary, promotion and educational qualifications -- some respondents tend to associate higher qualifications with increased salary rather than with promotion.

The results further indicate that the two main incentives provided by the Institute for staff participation in development activities are financial assistance and professional leave. In conclusion, the staff seem not to be well informed of explicit policies regarding benefits and rewards as they are about cost sharing policies.

Activities emphasized. The objectives of the formal and institution-focused activities appear more clear to the staff than the objectives of the informal and individualized development activities. The respondents tend to believe that the formal and institution-focused activities generally help to develop relevant knowledge, skills and attitudes related to the instructors work. In contrast, the evidence suggests that informal activities and others, classified as personal development activities (Berquist and Phillips, 1975; Toombs, 1975; Centra, 1978; Konrad, 1983), are not receiving sufficient attention in the program. Such activities include, as reported in Table 5.11, personal assistance, instructional evaluation, and professional conferences. The strong association of formal activities with the program tends to reflect the attention given by the community colleges in western Canada to orientation programs (Konrad, 1973:48; Collin, 1977:171; and Weleschuk, 1977:102). This is especially true for NAIT because most of the newly recruited instructors tend not to have previous pedagogical training. As a result, the August in-service program at NAIT, which was introduced in 1967, eventually became an employment requirement for newly recruited instructors in 1972 (Regulations, In-Service File 2A6, 1972). Consequently, the staff would naturally take this program more seriously and would tend to remember more aspects of it. The August in-service program, has also proved to be a well organized and effective program at NAIT because it has gone through a number of evaluations and revisions, since it was introduced 18 years ago.

Implementation strategies. The findings suggested that, because the various instructional departments were encouraged to identify and address their special staff development needs, the members of staff saw the involvement of the Institute's professional development unit to be minimal in the areas of instructional skills development. It was also found that NAIT has a Staff Development Committee composed of two members of the academic staff association, two chief academic officers appointed by the President, and the Vice-President, Instruction as chairman. This committee is responsible for the approval of applications for staff development leave (Collective Agreement, 1984-86, Section 25.03). On the one hand, the above evidence reflects those reported by Land (1984:1941A) and Campbell (1983:1652A) that technical institutes tend to use committees for the determination of staff development needs and approval of funds for personal development activities. On the other hand, the composition of the Staff Development Committee, as stated above, and the control exercised over the institution-based activities by the Institute's professional development unit appear to support the contention, expressed by Yorke (1977:167) and Fordham and Ainley (1980:54), that the organizations of technical institutes tend to be centralized in the decision-making arrangements.

In this connection, the findings suggested that the following two implementation strategies are not receiving sufficient attention: (1) communication of information; and (2) the effective use of human resources available within the Institute and the community. The concern of inadequate utilization of the expertise of the Institute's staff was expressed most often by three subgroups: the supervisors, the Business and Applied Arts division, and the Engineering Technology division. But the concern that the human resources available in the universities were not being utilized adequately was expressed equally by all subgroups.

Differences in perceptions of subgroups. Although the supervisors as a group generally rated the items higher than the instructors did, the correlation analysis showed that the two groups substantially agreed to the extent to which the items described the various characteristics of the program. However, the difference in the rating (and also in the ranking)

of item 6 (funds are allocated to departments) was significant between the two groups. Such a result suggests that how much the individual staff members know about staff development matters depends upon the nature of the organizational structure and the flow of information. In general, the supervisors demonstrated they were more informed about the various aspects of the staff development program than did the instructors. Thus, it may be argued that no statistical perceptual differences were found among the instructional divisions because the information available to staff depended more upon one's position in the organization than on one's field of specialization.

C. Orientation of the Staff Development Program at NAIT

One purpose of this study was to determine the orientation of the staff development program at NAIT in meeting both the institutional requirements and the personal needs of the individual staff. Therefore, in this section, the two-dimensional model developed in Chapter III, Figure 3.1 on page 68, is used to examine the orientation of the program on the three selected characteristics of purpose, control and activities.

Factor Analysis of the Items

A correlation matrix of the 21 items, which were used to describe the program, is shown in Table B.5.13 in the Appendix. Many of the items were substantially intercorrelated suggesting that the items could be grouped in some ways to produce a few basic measures for describing the staff development program at NAIT. Hence, a principal components factor analysis with varimax rotation was computed. The computations were done for three to seven factors. The three-factor solution was rejected because it accounted for only 49 percent of the total variance. Also while the four-factor solution accounted for 60 percent of the total variance, the factor loadings were not strong enough and hence it was also rejected.

Table 5.14
Highest Loadings of the Items Used to Describe the Staff Development Program on Orthogonal Factors

Item No.	Item Description	Orthogonal Rotated Factor F1	F2	F3	F4	F5
	Factor 1: Institution-focused					
8	Salary increases are used as a reward	-.68	.18	.09	.40	-.02
11	Staff Development unit assists individual staff	.91	-.04	.08	-.00	-.00
12	Program heads assist individual staff	.70	.10	-.16	.15	.56
13	Departments determine their needs	.67	.14	.34	.27	.25
14	Expertise of the staff is used	.81	-.28	.10	.24	-.11
15	Program develops knowledge, skills, attitudes	.78	-.08	.13	-.05	-.23
	Factor 2: Resource Control					
6	Funds are allocated to departments	.46	.55	.46	-.11	-.16
10	Needs are determined by Management	-.04	.86	-.03	.15	-.17
16	Various activities are used	.38	-.70	.01	.19	.04
21	Industry personnel participate in workshops	.14	-.52	.40	.14	.29
	Factor 3: Traditional Practices					
3	Policies describe cost sharing	.09	.26	.61	-.42	.27
4	Policies specify individuals' obligations	-.01	.04	.83	.24	-.19
20	University personnel participate in workshops	.25	-.24	.61	-.16	.12
	Factor 4: Voluntary Participation					
2	Policies specify release time	.14	.27	.25	-.65	.19
5	Policies specify personal improvement	.14	.06	.17	.68	-.05
7	Individuals bear continuing education costs	.02	.24	-.27	.34	.08
18	Staff discuss conference attendance	.11	.05	-.03	.83	.26
	Factor 5: Personal Development					
1	Policies describe benefits	.39	.29	.15	-.07	-.56
9	Promotions are used as a reward	-.29	-.02	.08	.47	.63
17	Departments review instructional programs	.36	.25	-.08	-.15	.76
19	Instructors attend other instructors' classes	-.12	-.09	.38	-.06	.53
	Percentage Total Variance	22.5	10.3	7.7	14.9	11.5

The six and seven-factor solutions were rejected, not because of the amount of variance they accounted for (74 and 80 respectively) nor the strength of the factor loadings, but because the results showed only one item in some of the factors. Thus, the five-factor solution, shown in Table 5.14, was adopted because it accounted for 67 percent of the total variance, and it also resulted in a minimum of three items in any of the five factors. The cut-off point used was .40. Where a single item loaded on more than one factor, the item was reported on the factor where it had the highest loading, as indicated by the rectangular boxes in Table 5.14. Those which exhibited the characteristics of double loadings on factors included items 3, 6, 8, 9, 12 and 21. In the case of item 7, the highest loading was .34, suggesting that the item was not very suitable for describing the program or it might not have been clearly understood by the respondents.

Definitions of the Factors

The definitions of the five factors were based on three considerations: (1) the items included in the factor; (2) the factor loadings of the items and (3) the correlation coefficients of the items in the correlation matrix. Hence, the five factors derived from the factor analysis were defined as follows:

Institution-focused (F1) : The degree to which the institution uses its own financial and human resources to achieve institutional improvement.

Resource control (F2) : The degree to which the funding policies and allocation of resources give control of staff development to a central unit.

Traditional practices (F3) : The degree to which the strategies and activities used for staff development reflect those of the traditional practices that rely mostly on grants and professional development leaves.

Voluntary participation (F4) : The degree to which funding policies are based on individuals' motivation and initiative to participate in development activities.

Personal development (F5) : The degree to which the program incentives and the activities help to attract and improve the performance of the individual members.

The above definitions imply that the first three factors or derived measures -- institution-focused, resource control, and traditional practices -- address conditions for meeting institutional requirements. The remaining two factors -- voluntary participation and personal development -- address personal needs.

The results of the factor analysis showed that the three factors which addressed conditions for meeting institutional requirements explained more than 40 percent of the total variance. In comparison, the two factors addressing the conditions of individual personal needs accounted for over 26 percent of the total variance. The institution-focused factor alone accounted for over 22 percent of the total variance indicating that this was the best factor for describing the orientation of staff development on the institutional dimension. The second factor for describing this dimension (resource control) accounted for over 10 percent of the total variance. The traditional factor was weak in describing staff development on this dimension as it explained only 7.7 percent of the total variance. Each of the two factors used to describe the personal dimension of staff development explained more than 10 percent of the total variance, with the voluntary participation factor being the better descriptor (it explained about 15 percent of the total variance) of the two factors.

Orientation of the Program. In the factor analysis, the "uncertain" responses were excluded for reasons stated in Chapter 4 and also in this chapter on page 105. As a result, the degree of orientation on the five factors was assessed by the MAS values (based on the four-point scale defined on page 105) of the items in the factor. Table 5.15 shows the five factors, their MAS values, and the assessed orientation. On a four-point scale, an MAS value of 2.50 and above was considered to indicate that the program orientation was high on that factor. An MAS below 2.50 was considered to indicate a low emphasis on the factor. Thus, Table 5.15 shows that the program orientation was high on the first three factors (MAS values from 2.59 to 2.83) which related to institutional requirements.

The MAS value for the fourth factor, voluntary participation, was 2.83 indicating that the program orientation was high on this measure which addressed personal needs. However,

the MAS value for the fifth factor, personal development, was below 2.50 indicating that the emphasis of program orientation appears to be low on this factor of personal needs.

Table 5.15
Orientation of the Staff Development Program at NAIT
Described by the Five Factors

Factor	MAS*	Indication of Orientation
Institution-focused	2.74	High on Institution requirements
Resource control	2.83	High on Institution requirements
Traditional practices	2.59	High on Institution requirement
Voluntary participation	2.83	High on Personal needs
Personal development	2.44	Low on Personal needs

* MAS value of 2.50 and above is considered to be high in orientation and below 2.50 is considered to be low on a 1 to 4 scale.

Implications of the Findings

The respondents perceived the program orientation to be high on all three of the measures addressing institutional requirements. In contrast, it was only in the case of one measure of personal needs, voluntary participation, that the respondents perceived the orientation to be high. The staff perceptions of the program orientation on personal development was low. Thus, the staff development program at NAIT is perceived to emphasize more of the institution's requirements than the individuals' personal needs. These results justify a conclusion that the program tends to be a management effort to achieve effective organization. In so doing, management defines objectives and activities and it provides the control necessary to improve efficiency and organizational performance.

The findings reported in this section of the study tend to be consistent with those reported in the previous sections of this chapter (pages 115 and 117). For example, the

evidence is clear that the respondents viewed the institution-focused activities as the most emphasized aspects of the staff development program at NAIT. These perceptions may have been influenced by the August in-service program which appears to be the major component of the staff development program at NAIT because it is an employment requirement.

But the program addresses personal needs of individual staff members as well. One such indication is the high orientation of the program on the dimension of voluntary participation. As reported by O'Connell (1983:673), faculty participation in development activities tends to be determined mostly by inner-motivations. Hence, the findings suggest that the Institute relies on the initiatives and inner-motivations of faculty to achieve involvement in development activities.

Because the findings of this study are consistent regarding the program orientation, it could be argued that the five factors (reported on page 121 and by Table 5.15 on page 123) are suitable for describing the program at NAIT. However, any generalization of using the factors to describe staff development must be made with caution because of certain limitations. First, the 21 items used in this study were inadequate to cover all possible dimensions of the concept. Second, the items on the questionnaire were carefully selected to be relevant to NAIT. Third, the definitions of the factors were chosen such that they were meaningful for this study. Consequently, the number of factors and their definitions could vary slightly when a different set of data is used because of the overlaps found in the factor loadings for some items.

Nevertheless, the findings and the methodology confirm two important considerations or perspectives for analysing staff development. One deals with institutional requirements and the other the needs of individual members of the organization. The methodology also shows that the program orientation can be measured on a number of scales that describe the characteristics of the program. In addition, the methodology indicates that factor analysis can be a useful technique for exploring these scales.

Despite the limitations stated above, an indepth study of the results (factors contribution to variance combined with the MAS values) suggests that four of the five factors

appear to be useful scales for assessing the orientation of staff development on the two perspectives: organizational and individual competence. They are: institution-focused; resource control; voluntary participation; and personal development. Each of these five factors accounted for no less than 10 percent of the total variance. The fifth factor, traditional practices, appears not to be a strong scale. An examination of the data revealed that there were only three items in the factor and item 20 (University personnel participate in workshops) was rated in Table 5.11 on page 10 as not being a characteristic of the program.

D. Summary of the Chapter

This chapter presented findings regarding the staff perceptions of the characteristics of the staff development program at NAIT and also a discussions of the findings. The staff characteristics were presented and discussed in relation to needs and faculty participation in development activities. Staff awareness of the various aspects of the program was discussed in terms of the total sample and the subgroups. The general characteristics of the program were presented and described in terms of the aims, policies and funding, benefits and rewards, and strategies and activities used for implementation. Finally, five factors were derived for describing the orientation of the staff development program at NAIT regarding meeting institutional requirements and addressing individual personal needs.

Chapter VI

STAFF PERCEPTIONS OF PROGRAM EFFECTIVENESS

The previous chapter described the characteristics of the staff development program at NAIT as perceived by the instructional staff. This chapter provides an assessment of staff perceptions regarding the effectiveness of the program. The chapter is organized into five sections. The first provides the findings regarding the effectiveness of the program approaches; and, in the second, the findings are discussed. The third section examines staff perceptions regarding the outcomes of the program, whereas in the fourth section the factors considered to either promote or impede implementation efforts are described. The fifth and final section explores relationships among the variables used in assessing effectiveness.

A. Assessment of the Staff Development Approaches

The research question addressed in this section is: to what extent do the instructional staff perceive the staff development approaches used at NAIT to be effective? These approaches are assessed from six perspectives: (1) clarity of objectives; (2) needs assessment; (3) managerial practices; (4) organizational climate; (5) relevant and useful activities; and (6) achieving the program objectives. The data obtained from Sections A, B and C of Part III of the instrument (26 items) were used in answering the question.

Table 6.1 shows, for staff positions, the mean scores and standard deviations of the responses to the 26 items. The items are grouped according to the six assessment dimensions specified above. Table 6.2 shows the corresponding values for the three principal instructional divisions. Using the five-point scale (1 = completely disagree; 2 = mostly disagree; 3 = partly agree; 4 = mostly agree; and 5 = completely agree), a mean score of 3.50 or greater for an item on the five-point scale was considered to indicate that the respondents mostly agreed the

Table 6.1
Approaches to Staff Development Program at NAIT
According to Staff Positions

Item	Variables Describing Approaches	Instructors (1) (N = 72) Mean	SD	Supervisors (2) (N = 37) Mean	SD	Total (N = 109) Mean	SD	t-test Value	Sig of Means
	I. Clarity of objectives								
1.	Clear about definition of staff development	2.88	1.15	3.19	1.10	2.84	1.04	-1.37	N.S.
2.	Clear about the aims of the program	2.97	1.21	3.29	1.22	3.08	1.22	-1.32	N.S.
3.	Clear about the activities constituting the program	2.83	1.08	3.37	1.08	3.02	1.11	-2.48**	2 > 1
4.	Clear about the responsibilities of the Institute	2.94	1.10	3.27	1.04	3.06	1.09	-1.48	N.S.
5.	Clear about expectations from the staff members	2.73	1.16	3.19	.99	2.89	1.12	-2.04*	2 > 1
	II. Needs assessment								
17.	Individual staff determine their professional needs	3.94	.95	3.86	.82	3.92	.90	0.42	N.S.
18.	Needs and objectives determined by team approach	3.15	1.11	3.39	.90	3.23	1.04	-1.12	N.S.

Table 6.1 (Continued)

Item	Variables Describing Approaches	Instructors (1) (N = 72) Mean	SD	Supervisors (2) (N = 37) Mean	SD	Total (N = 109) Mean	SD	t-test Value	Sig of Means
	III. Managerial practices								
6.	The objectives of staff development keep changing	3.06	1.03	3.25	.77	3.12	.94	-0.99	N.S.
9.	The management communicates information	2.94	1.14	3.22	1.08	3.04	1.12	-1.19	N.S.
10.	Resources are available for implementation	3.35	.92	3.32	1.00	3.34	.94	0.12	N.S.
14.	The program budget compares favourably with others	2.58	1.08	2.74	1.26	2.64	1.14	-0.60	N.S.
19	Initiative from staff is encouraged	3.35	1.03	3.54	1.07	3.41	1.04	-0.91	N.S.
20.	The management assists with industrial experience	2.69	1.21	2.78	1.23	2.72	1.21	-0.37	N.S.
	IV. Organizational climate								
11.	Departmental structure promotes implementation	2.97	.97	3.05	1.01	3.00	.98	-0.42	N.S.
12.	Decision-making structure promotes implementation	2.88	.89	3.06	.91	2.94	.89	-0.94	N.S.
13.	Commitment to goals promotes implementation	3.03	.95	3.31	.71	3.13	.88	-1.52	N.S.
15.	University courses are recongized for rewards	3.71	1.09	3.44	1.25	3.62	1.12	1.15	N.S.
16.	Industrial experience is recognized for rewards	2.99	1.12	2.83	1.03	2.93	1.09	0.67	N.S.

Table 6.1 (Continued)

Item	Variables Describing Approaches	Instructors (1) (N = 72) Mean	SD	Supervisors (2) (N = 37) Mean	SD	Total (N = 109) Mean	SD	t-test Value	Sig of Means
	V. Relevant and useful activities								
22.	Student rating of instructors is part of the program	2.43	1.20	2.62	1.32	2.49	1.24	-0.77	N.S.
23.	The program is used to evaluate staff	2.39	1.20	2.35	1.03	2.38	1.13	0.18	N.S.
24.	The August in-service develops understanding of goals	3.53	1.10	3.97	.72	3.68	1.00	-2.21**	2 > 1
25.	The August in-service helps to develop teaching skills	3.29	1.18	3.78	.78	3.46	1.08	-2.31**	2 > 1
26.	The June in-service provides opportunity to improve skills	3.32	1.21	3.57	.80	3.41	1.08	-1.10	N.S.
	VI. Achieving objectives								
7.	The program emphasis is on Institute's requirements	3.32	1.09	3.39	1.07	3.35	1.09	-0.29	N.S.
8.	The program addresses needs of the individuals	2.90	.99	3.25	.96	3.02	.99	-1.73	N.S.
21.	University courses form part of the program	3.91	1.03	4.27	.61	4.04	.92	-1.93*	2 > 1

** Significant at .01 level
* Significant at .05 level

Table 6.2
Approaches to Staff Development Program at NAIT
According to Instructional Divisions

Item	Variables Describing Approaches	Bus & App. (1) (N = 28) Mean	SD	Industrial (2) (N = 48) Mean	SD	Eng Tech (3) (N = 33) Mean	SD	F-Ratio	Sig of Means
	I. Clarity of objectives								
1.	Clear about definition of staff development	3.11	1.03	3.04	1.11	2.78	1.27	.71	N.S.
2.	Clear about the aims of the program	3.14	1.20	3.23	1.17	2.81	1.29	1.16	N.S.
3.	Clear about the activities constituting the program	3.11	1.07	3.04	1.07	2.91	1.23	.25	N.S.
4.	Clear about the responsibilities of the Institute	3.04	1.10	3.15	1.03	2.94	1.19	.35	N.S.
5.	Clear about expectations from the staff members	3.04	1.07	2.92	1.15	2.72	1.14	.62	N.S.
	II. Needs assessment								
17.	Individual staff determine their professional needs	3.75	.89	3.98	.86	3.97	.98	.64	N.S.
18.	Needs and objectives determined by team approach	3.60	1.04	3.17	.96	3.03	1.12	2.28	N.S.

Table 6.2 (coninued)

Item	Variables Describing Approaches	Bus & App. (1) (N = 28) Mean	SD	Industrial (2) (N = 48) Mean	SD	Eng Tech (3) (N = 33) Mean	SD	F-Ratio	Sig of Means
	III. Managerial practices								
6.	The objectives of staff development keep changing	3.37	.84	3.22	.86	2.77	1.08	3.38*	1 > 3
9.	The management communicates information	3.18	1.21	3.19	1.06	2.69	1.10	2.19	N.S.
10.	Resources are available for implementation	3.44	.97	3.47	.77	3.06	1.10	2.01	N.S.
14.	The program budget compares favourably with others	2.68	1.31	2.80	.98	2.30	1.22	1.60	N.S.
19.	Initiative from staff is encouraged	3.33	.92	3.45	1.09	3.44	1.08	.11	N.S.
20.	The management assists with industrial experience	3.36	1.13	2.50	1.19	2.48	1.15	5.68**	1 > 2, 3
	IV. Organizational climate								
11.	The departmental structure promotes implementation	3.15	.95	3.13	.89	2.73	1.09	1.88	N.S.
12.	Decision-making structure promotes implementation	3.00	.85	3.04	.87	2.72	.95	1.22	N.S.
13.	Commitment to goals promotes implementation	3.35	.79	3.04	.96	3.07	.79	1.09	N.S.
15.	University courses are recognized for rewards	3.52	.93	3.94	.99	3.20	1.35	4.34**	2 > 3
16.	Industrial experience is recognized for rewards	3.00	.97	3.08	1.14	2.63	1.06	1.66	N.S.

Table 6.2 (continued)

Item	Variables Describing Approaches	Bus & App. (1) (N = 28) Mean	SD	Industrial (2) (N = 48) Mean	SD	Eng Tech (3) (N = 33) Mean	SD	F-Ratio	Sig of Means
	V. Relevant and useful activities								
22.	Student evaluation of instructors is part of the program	2.50	1.40	2.46	1.12	2.55	1.28	.05	N.S.
23.	The program is used to evaluate staff	2.50	1.14	2.67	1.20	2.07	.94	2.84	N.S.
24.	The August in-service develops understanding of goals	3.96	.89	3.76	.98	3.33	1.05	3.24*	1 > 3
25.	The August in-service helps to develop teaching skills	3.59	1.24	3.53	1.06	3.24	.96	.97	N.S.
26.	The June in-service provides opportunity to improve skills	3.46	1.27	3.50	.96	3.41	1.08	.57	N.S.
	VI. Achieving objectives								
7.	The program emphasis is on requirements of the Institute	3.27	1.03	3.46	1.02	3.20	1.24	.59	N.S.
8.	The program addresses needs of the individuals	3.29	.82	2.94	.98	2.91	1.11	1.43	N.S.
21.	University credit courses are regarded as part of the program	4.11	.96	4.15	.96	3.81	.82	1.39	N.S.

** Significant at .01 level
* Significant at .05 level

approach was effective. A mean value between 2.50 and 3.50 indicated the respondents agreed in part that the approach was effective. When the mean value was below 2.50, the approach was regarded as being ineffective according to the perceptions of the respondents.

The values of the standard deviations for the individual items were used to indicate the level of consensus in the responses. When the value was less than 1.00, it was considered to indicate more consensus or less variation in the responses; and a value greater than 1.00 indicated less consensus or greater variation.

Clarity of Program Objectives

Total sample. As reported in Table 6.1, the mean scores of the five items used to assess this dimension were all between 2.50 and 3.50. This indicates that, from the perceptions of the respondents, the program definition and objectives were only partly clear to them. All the standard deviations were greater than 1.00, suggesting that there was considerable variation in the perceptions of the respondents regarding the clarity of the program.

Subgroup comparisons. Table 6.1 also shows that while the supervisors' mean scores were above 3.00, those of the instructors were below 3.00 for all five items. But significant differences in the means between the two groups were found for only two items: item 3 (clear about the activities constituting the program) and item 5 (clear about expectations from the staff). According to Table 6.2, there were no significant differences, on any of the five items, among respondents of the three instructional divisions.

Needs Assessment

Total sample. Table 6.1 shows that the mean score for item 17 (individual staff members determine their professional needs) was above 3.50 with a standard deviation below 1.00. But the mean score for item 18 (needs and objectives determined by cooperative approach) was between 2.50 and 3.50 with a standard deviation above 1.00. Thus, there appeared to be consensus among the respondents regarding the effectiveness of the strategy that

permitted individuals to determine their professional needs. But concerning the cooperative approaches used for needs determination, the respondents perceived those to be partly effective. The data showed that there was also a considerable variation in the staff perceptions regarding the latter approaches.

Subgroup comparisons. Both Tables 6.1 and 6.2 show that none of the differences among the subgroups was significant for the two items.

Managerial Practices

Total sample. All six items used in assessing this dimension received mean scores between 2.50 and 3.50 (Table 6.1). That is, in the perception of the respondents, the managerial practices used by NAIT to implement staff development was only partly effective. However, it was only in the case of two items (item 6: the objectives of staff development keep changing and item 10: resources are available for implementation) that the standard deviations were below 1.00. For the remaining four items (items 9, 14, 19, 20) the variations in the staff responses were considerable (standard deviations above 1.00), especially for item 20 (management assists with industrial experience, with a standard deviation of 1.21).

Subgroup comparisons. Although the supervisors' mean scores for five of the six items were higher than the mean scores of the instructors, none of the differences was significant. But Table 6.2 shows significant differences among the instructional divisions. A significant difference was found between the mean scores of the Business and Applied Arts division and the Engineering Technology division for item 6 (program objectives keep changing), with the mean of the former group being the higher. The mean score of the Business and Applied Arts division for item 20 (management assists with industrial experience) was also significantly higher than those of the other two divisions.

Organizational Climate

Total sample. This dimension was assessed with five items. Table 6.1 shows that only item 15 (relevant university courses are recognized for rewards and incentives) received a mean score above 3.50 but it also had the greatest standard deviation (1.12). The remaining four items received mean values between 2.50 and 3.50; and three of them (items 11, 12, and 13 which dealt with organizational structures) had standard deviations below 1.00. This suggests that the respondents perceived the organizational decision-making structure at NAIT to be partly effective in promoting staff development. Also there was a fairly high level of consensus among the respondents on this issue. In contrast, there was little consensus as to the effectiveness of the Institute's rewards system, even though the practice of rewarding university credit courses appeared to be an effective system.

Subgroup comparisons. Whereas the means of the supervisors and the instructors did not differ statistically for any of the five items, the data in Table 6.2 show a significant difference between the means of the Industrial division (3.94) and the Engineering Technology division (3.20) for item 15 (university courses are recognized for rewards and incentives). The data showed that there were greater variations in the responses of the Engineering Technology division than there were in the other two divisions.

Relevant and Useful Activities

Total sample. As shown in Table 6.1, item 24 (August in-service develops understanding of the Institute's goals) received the highest mean score of 3.68. Two other items (25 and 26), which received mean scores between 2.50 and 3.50, also related to the usefulness of NAIT in-service activities. The two items with mean scores below 2.50 were: item 22 (evaluation by students forms part of the program) and item 23 (staff development is used to evaluate staff). With the exception of item 24, with a standard deviation of 1.00, all other items had standard deviations greater than 1.00. This indicated a considerable variation in the perceptions of the respondents regarding the items, especially those dealing with staff

evaluation.

Subgroup comparisons. The supervisors' mean scores were significantly higher than those of the instructors for the two items (24 and 25) related to the usefulness of the August in-service activities (Table 6.1). But all the standard deviations of supervisors were lower than those of the instructors for the items of this dimension. And in the case of the three items, related to in-service activities (items 24, 25, 26), all the supervisors' standard deviations were below 1.00. A significant difference was also found between the means of the Business and Applied Arts and the Engineering Technology divisions regarding item 24 (August in-service develops understanding of Institute's goals). Table 6.2 shows that the mean of the former was significantly higher than that of the latter.

Achieving the Objectives

Total sample. Table 6.1 shows item 21 (university credit courses are regarded as part of the program) received a mean score of 4.04 and a standard deviation of 1.00. This indicates there was consensus that the program was meeting this objective of university upgrading. In comparison, the mean scores for the remaining two items -- item 7 (program emphasizes institutional requirements) and item 8 (program addresses individuals' needs) -- were 3.35 and 3.02, respectively. While the standard deviation for item 8 was below 1.00, that of item 7 was above 1.00.

Subgroup comparisons. The supervisors' mean score (4.27) for item 21 differed significantly from the instructors' (3.91) mean score (Table 6.1). In addition, the standard deviation of supervisors for the item was 0.61, while that of the instructors was 1.03. That is, there was greater consensus among the supervisors that university upgrading formed part of the program than there was among the instructors. But according to Table 6.2, no statistical differences were found among the instructional divisions for any of the three items used in assessing this dimension.

Staff Comments from the Open-Ended Questions

The issues identified in the open-ended questions, as requiring management attention, were categorized into six groups to conform with the six dimensions used in assessing the program approaches. The results are reported in the Appendix in Tables B.6.1 for staff positions and B.6.2 for the three instructional divisions. These issues were used in the discussion of the effectiveness of the program approaches presented in the following section.

B. Discussion of Effectiveness of Approaches to Staff Development

The results of this study showed that there was more agreement among the subgroups regarding the effectiveness of the various approaches to staff development at NAIT than there were differences. Between the supervisors and instructors, statistically significant differences in perceptions were found in the areas dealing with clarity of objectives and the use of relevant activities. Among the instructional divisions, significant differences existed on issues concerning managerial practices, organizational climate and the use of relevant activities. The specific findings are discussed below.

Clarity of Program Objectives

The total respondents were only partially clear regarding the objectives and activities of staff development at NAIT. This assertion is based on the responses to the forced-choice items reported in Tables 6.1 and 6.2, as well as the comments made in the open-ended questions presented in Tables B.6.1 and B.6.2 in the Appendix. The Institute's definition of staff development was an aspect that many staff appeared not to be clear about. The following comments from the open-ended questions are indications of the respondents' lack of clarity of the program definition:

- "I do not fully understand the mandate of the staff development program. Perhaps an info package would help."
- " Obviously I know nothing about the staff development program."

- " I am not familiar with the staff development program; I am not aware enough of the staff development program to comment."

These comments were not unexpected because staff development is a complex phenomenon. For example, Toombs (1973:710) noted that "the usual preoccupation with how to do it tended to neglect attitudes, values and ways of conceiving the faculty member's role and functions in staff development." The findings also reinforced the observation by Konrad (1973:50) that the major problem facing western Canadian community colleges regarding faculty development, was "the program concerns that related to the designing and availability of suitable and imaginative programs to meet the specific needs of a faculty."

But faculty development projects reported in connection with the Association of American Colleges Project in 1979 (Bowen, 1980:24; Carlberg, 1980:27; Siegel, 1980:139; Voelkel, 1980:6) suggested that the clarity of a program's purposes contributed to its success. Success was defined in terms of faculty ownership, participation and satisfaction. Where differences in clarity of purposes were found in this study, instructors reported less clarity with the program objectives than did supervisors, and the staff of the Engineering Technology division than the staff of the Business and Applied Arts and Industrial divisions (Tables 6.1 and 6.2 and Tables B.6.1 and B.6.2 in the Appendix). These two subgroups were also least involved in development activities (Tables 5.8 on page 101 and B.5.3 in the Appendix). In this respect, the findings suggested that NAIT, like other postsecondary institutions, could improve faculty participation in development activities through efforts to clarify and communicate staff development purposes to faculty. Clearly defined objectives and activities do not necessary imply a rigid program. As reported by Siegel (180:140):

> Having a clear purpose did not necessarily mean having an unalterable cause. Again, success seemed to evolve from flexible, adaptable programs which were designed to meet specific needs, and not from unyielding attachment to particular ways of doing things.

Thus, a clearly defined program can be flexible if the purposes are redefined regularly to meet changing situations.

Needs Assessment

The respondents as a whole appeared to be satisfied with the Institute's needs assessment strategies that gave opportunity to individual faculty members to determine their professional needs and pursue them. But the lack of a team approach for determining common goals led to dissatisfaction among the supervisory staff of the Business and Applied Arts division as well as the Engineering Technology division (Tables B.6.1 and B.6.2 in the Appendix).

The evidence seemed to suggest that the staff of the Industrial division were satisfied with the institutional leadership and the support services provided on needs assessment by the NAIT professional development unit. As such, the findings tended to support the view that administrative leadership is required for some activities that will benefit the organization (Yorke, 1977; Nelson, 1980; Siegel, 1980). Arguing for assistance in identification of development needs, Fordham and Ainley (1980:37) state that while technical instructors may be aware of a general requirement for further education, those without previous teacher education may not be aware of their specific requirements. In this connection, the suggestion by Nelson (1980:148) that leadership is required in areas where faculty are reluctant to take initiative may explain the satisfaction expressed by the Industrial division. This category of staff, because of their previous education (Table B.5.1), generally wanted to pursue university degrees or to become professional teachers. As a result, they perceived the favourable attitude of management toward university upgrading as helpful.

Managerial Practices

The data reported for this dimension of the program indicated that the respondents were only partially satisfied with the management of the program. Whereas a number of the respondents indicated some satisfaction with management efforts to encourage staff initiative and to acquire resources for implementation, other staff, mainly from the instructors' group and the Business and Applied Arts division, were less satisfied with communication and

guidance provided by program leadership.

In particular, the respondents would like to see more leadership and guidance regarding arrangements for industrial leave and practical experience. The findings support Bailey's (1983:757A) conclusion that instructors are generally less satisfied with managerial practices than are program heads. That is, while policies and objectives of the program may be adequate and favourable, faculty members are usually not as aware of, or familiar with, the policies as are the program heads.

Another important finding was that the subgroups that reported less satisfaction with managerial practices (the Business and Applied Arts division and the Engineering Technology division, as reported in Tables 6.2 and B.6.2) were also the groups that were least involved in development activities (Table B.5.3). Two explanations are possible. One is that those who complained could be the individuals who were generally not interested enough to commit their time to professional development activities and, therefore, tried to blame the management to justify their actions. Another explanation is that these individuals refused to participate in order to show their dissatisfaction and to register their protest to bring about a change.

While the first explanation seemed to describe the behavior of the instructors of the Engineering Technology division, the second explanation tended to describe the behavior of the instructors of the Business and Applied Arts division. That is, whereas the former group consistently rated low most of the items for measuring effectiveness, the latter group's ratings showed a great deal of variation (Table 6.1). In addition, the Engineering Technology division indicated a greater lack of awareness of the program, but the Business and Applied Arts division made suggestions for improving the organizational climate and subsequently for improving implementation.

The following proportions (percentages) of the respondents identified the following issues that required management attention in the open-ended questions: (1) workload and timetabling problems (11%); (2) better communication regarding approved activities (8%); (3) provision for more funds and resources (7%); (4) negotiation by the

management to enable the University of Alberta to offer credit courses at NAIT campus (4%); and (5) inadequate use of the expertise of the Institute staff to implement staff development activities (3%). According to Table B.6.2 in the Appendix, three of the four respondents who raised the issue of university credit courses were staff of the Industrial division. This strengthens the findings reported on page 139 that most of the NAIT staff, who sought further education, generally aimed at getting university degrees.

Organizational Climate

The findings indicated that the Institute's reward structure for staff development tended to be linked to university upgrading. Thus, some respondents expressed the concern that "far too much emphasis was placed on university upgrading which tended to neglect upgrading of knowledge in the technical field."

Another important finding of this study was that the instructional staff appeared to experience job satisfaction. One respondent commented that "NAIT is pleasant, and our program head is a positive note in all areas." This comment, together with the low rate of staff turnover, reported earlier on page 100, provided evidence of job satisfaction among the instructional staff at NAIT. The results seemed to corroborate the study reported by Riday, et al., (1984:48) that community college faculty tended to express satisfaction with their jobs.

The results also suggested the need for NAIT to explore the use of alternate incentives, other than salary increases, for participation in staff development activities. The following comment by one of the respondents summarized the comments made by many others:

> Instructional staff at Salary Maximum (E-10) on grid have no monetary incentive to pursue further education. These tend to be the staff with the longest service and as a result the least with recent industrial experience or educational training. The current structure encourages those with the most up to date knowledge to get more; and those with the most outdated knowledge to do nothing.

The concern for alternate incentives was expressed mostly by the supervisors, staff of the Business and Applied Arts division and staff of the Engineering Technology division. Thus, it illustrates the frustration of these relatively well qualified staff with the reward structure at

NAIT. It also points to the weakness in the system that links rewards and incentives mainly to university upgrading.

Relevant and Useful Activities

The findings of the study seemed to highlight the important role of the August in-service program at NAIT. The June in-service activity was also perceived by the staff to be relevant and useful. However, a goodly number of the respondents complained about the bad timing of the latter because of timetable commitments (Table B.6.1). That 13 of the 18 complaining about the bad timing were from the Industrial division, who were also the highly involved group (Table B.5.3), suggests that the complaints were genuine criticisms.

Two other matters mentioned by the respondents concerned upgrading in the technical fields and adequacy of the content of the August in-service program. In connection with the former, the respondents indicated that upgrading in technical fields had been neglected because the emphasis was usually on university upgrading in the Faculty of Education. Regarding the latter, the contention was that the development activities often were directed more at the technology programs and tended to neglect the needs of the apprenticeship programs.

Finally, the findings revealed that instructor evaluation was not an important consideration in the staff development program at NAIT. O'Connell (1983:663) observed that "differences of opinion prevail concerning the importance of the degree of integration of faculty development programs into a college's evaluation and rewards system." He further concluded from his study that "no support has been found for either the argument that faculty development activities ought to be separated from the evaluation and reward system or for the argument that the two ought to be integrated" (p. 671).

Evidence in this study also appeared to be inconclusive. The respondents seemed to agree that the program was not emphasizing staff evaluation. In addition, the data showed no significant differences in the perceptions of the different subgroups regarding this issue. However, three respondents in the open-ended questions indicated that instructor observations

and students' rating of instructors must be increased. In this case, it could be argued that the items on staff evaluation received low ratings because of the misconception or negative attitude often associated with the term evaluation.

Achieving the Objectives

Responses to both the forced-choice items and the open-ended questions showed that the major objective of the staff development program at NAIT, as perceived by the respondents, was university upgrading. This perception was held by all the subgroups and, especially, by the supervisors and staff of the Industrial division. However, it is evident from the following comments that the program is not ~~meeting fully all the~~ desired objectives:

- "Instructors tend to use their leaves for educational purposes due to the potential for financial gains."
- "Equal credit should be given for industrial leave as it is for educational leaves. For industrial instructors (trades) industry contact is of top priority.
- "Emphasis for staff development of the Industrial division should be a lot more industry related. Tradesmen are taught in this division therefore more credit should be given to industrial oriented updating and upgrading courses than it is given at present."

These comments, coming from the highly participative groups identified in this study (the Industrial division and the supervisors), suggest that the objectives emphasized by the program appeared not to be the ones most desired by the participants.

Another objective of staff development that seemed to be absent from the program at NAIT was career development. For example, one respondent noted: "I think staff development should include the opportunity for staff to move to a different area of interest." Another respondent commented "provide a more collegial atmosphere with more opportunity to take on administrative duties as a one-year assignment rather than the current situation where there appears to be quite a separation between teaching and administration."

C. Perceptions Regarding Outcomes of Staff Development

This section addresses the research question: to what extent do the instructional staff associate staff development efforts with the selected outcome measures? The fourteen items in Section D of Part III of the questionnaire were used for assessing the perceptions of the respondents regarding the outcomes. Tables 6.3 and 6.4 present the mean scores for the ratings to the items by staff positions and divisions, respectively. Using the five-point scale, a mean of 3.50 and above indicates that the program was perceived to have influenced the identified outcomes. A mean score between 2.50 and 3.50 indicates the program had a moderate effect on the outcome, and a mean below 2.50 indicates little effect.

The Findings

Total sample. Table 6.3 shows that the mean values of the 14 items were all between 2.50 and 3.50, indicating that the outcomes were perceived to be affected moderately by the program. The items that received the highest mean scores included item 2 (staff knowledge); item 3 (staff confidence); and item 4 (teaching performance). The items with lowest scores included item 8 (team work); item 6 (environmental awareness); and item 10 (staff interaction).

Subgroup comparisons. It was found that the supervisors' mean scores were higher than those of the instructors for all 14 items. But according to Table 6.3, the mean scores of the two groups differed significantly beyond the .05 level for only two of the items: item 10 (staff interaction) and item 12 (career development). Table 6.4 shows significant differences in means among the instructional divisions for three of the items. In the case of two of these items -- item 2 (staff knowledge) and item 7 (Institute goals) -- the means of respondents in the Industrial division were significantly higher than the means of respondents in the Engineering Technology division. For item 4 (teaching performance), the mean of respondents in the Engineering Technology division was statistically lower than those of the other two divisions.

Table 6.3
Staff Development Outcomes According to Staff Positions

Item No.	Program Outcomes	Instructors (1) (N = 72) Mean	Supervisors (2) (N = 37) Mean	Total (N = 109) Mean	t-test	Sig of Means
1.	Student learning	3.15	3.43	3.25	-1.44	N.S.
2.	Staff knowledge	3.37	3.62	3.42	-1.24	N.S.
3.	Staff confidence	3.26	3.51	3.35	-1.18	N.S.
4.	Teaching performance	3.17	3.54	3.29	-1.77	N.S.
5.	Professional awareness	3.23	3.54	3.33	-1.42	N.S.
6.	Environmental awareness	2.67	2.95	2.77	-1.20	N.S.
7.	Institute goals	2.86	3.19	2.96	-1.57	N.S.
8.	Team work	2.65	2.73	2.68	-0.37	N.S.
9.	Job satisfaction	2.81	3.19	2.94	-1.86	N.S.
10.	Staff interaction	2.61	3.22	2.82	-2.81**	2 > 1
11.	Teaching methods	2.94	3.25	3.05	-1.49	N.S.
12.	Career development	2.79	3.24	2.94	-1.89*	2 > 1
13.	Professional status	3.07	3.49	3.21	-1.79	N.S.
14.	Institute image	2.92	3.29	3.04	-1.71	N.S.

** Significant at .01 level
* Significant at .05 level

Table 6.4
Staff Development Outcomes According to Instructional Divisions

Item No.	Program outcomes	Bus/App. (1) (N = 28) Mean	Industrial (2) (N = 48) Mean	Eng Tech (3) (N = 33) Mean	F-ratio	Sig of Means
1.	Student learning	3.32	3.39	2.96	2.06	N.S.
2.	Staff knowledge	3.54	3.65	3.09	3.05*	2 > 3
3.	Staff confidence	3.46	3.46	3.06	1.51	N.S.
4.	Teaching performance	3.54	3.44	2.88	4.12*	3 < 1, 2
5.	Professional awareness	3.18	3.52	3.19	1.26	N.S.
6.	Environmental awareness	2.79	2.93	2.48	1.54	N.S.
7.	Institute goals	3.00	3.21	2.54	3.65*	2 > 3
8.	Team work	2.96	2.73	2.34	2.63	N.S.
9.	Job satisfaction	3.18	2.89	2.79	1.16	N.S.
10.	Staff interaction	3.04	2.83	2.63	1.07	N.S.
11.	Teaching methods	3.14	3.17	2.77	1.63	N.S.
12.	Career development	3.00	3.04	2.75	0.60	N.S.
13.	Professional status	3.43	3.31	2.88	2.06	N.S.
14.	Institute image	3.18	3.13	2.81	1.02	N.S.

* Significant at .05 level

Discussion of the Findings

The results reported above indicate that in total respondents perceived the staff development efforts at NAIT to affect moderately the effectiveness of the Institute. The effect of the program was perceived to be strongest in improving the performance of the staff in their instructional duties. The weakest effect of the program was in the development of human relations skills and personal development. This finding may be explained by staff characteristics before employment at NAIT and the policy of the Institute to make the August in-service program an employment requirement for newly recruited instructional staff.

As previously reported in Table 5.5 on page 98, more than 76 percent of all respondents had only completed the August in-service program as the main formal preparation in teacher education. Consequently, these staff saw the program as having provided them with vital knowledge and skills for their jobs. The staff of the Industrial division also perceived the August in-service program to be useful in providing them with instructional skills because most had no previous pedagogical training before obtaining employment at NAIT.

In contrast, the staff of the other two divisions, especially the Engineering Technology division (as reported by Table B.6.2 in the Appendix), considered the August in-service program as not meeting their specific needs. It appeared that the staff of these two divisions favoured informal and individualized activities because their educational backgrounds were very much different from the staff of the Industrial division (Table B.5.8 in the Appendix). In this connection, respondents did not perceive the staff development program to contribute as much to meeting the needs of the individual staff members as it did to overall staff performance in instructional duties. The program was also perceived to have failed in improving interaction among faculty.

D. Factors Affecting Provision and Implementation of Staff Development

Another research question investigated was: what factors were considered to influence the provision and implementation of staff development? Sixteen factors were presented in Sections E and F of the questionnaire and rated by the respondents on a five-point scale to indicate, in their opinion, which of the factors either promoted or impeded staff development efforts at NAIT. The five-point scale was assigned the following numerical values: 1 = no effect; 2 = slight effect; 3 = moderate effect; 4 = high effect; 5 = very high effect.

Factors Considered to Promote Staff Development

Table 6.5 reports the frequency, mean score and rank order of responses by the instructors, supervisors and total respondents to the eight factors considered to promote the provision and implementation of staff development at NAIT. Table 6.6 presents corresponding data by the instructional divisions. A mean value of 3.50 and above was considered to indicate that the factor was perceived to promote provision and implementation. A mean value below 2.50 indicated a slight or no effect.

Total sample. As shown in Table 6.5, only one of the eight factors had a mean score higher than 3.50, and that was factor 3 (changes occurring in industry). The mean scores of the remaining seven factors were between 2.50 and 3.50, indicating that the respondents perceived the identified factors as moderately promoting implementation.

Ranking of items by subgroups To examine the differences in the ranking of the factors among the subgroups, Spearman rank order correlation coefficients (rho) were computed. As shown in Table 6.7, rho between the instructors and the supervisors was significant at the .05 level. In contrast, none of the rho values between the divisions were significant. This finding suggests that supervisors and instructors ranked the factors in the same order of importance but there was no strong agreement in the ranking of the factors by the divisions.

Table 6.5
Factors perceived to Promote Staff Development at NAIT
According to Staff Positions

Item No.	Facilitating Factor	Instructors (1) (N = 72) Mean	Rank	Supervisors (2) (N = 37) Mean	Rank	Total (N = 109) Mean	Rank	t-test Value	Sig of Means
1.	Changes in the student enrolment	2.64	8	2.78	8	2.69	8	-0.60	N.S.
2.	Changes in the Institute's programs	3.22	2	3.54	5.5	3.33	4	-1.58	N.S.
3.	Changes occurring in industry	3.36	1	3.97	1	3.58	1	-3.16**	2 > 1
4.	Availability of resources to implement	3.18	4	3.86	2	3.42	2	-3.45**	2 > 1
5.	A cooperative attitude among the staff	3.09	6	3.70	4	3.31	6	-3.13**	2 > 1
6.	The structure of rewards and incentives	3.14	5	3.81	3	3.38	3	-3.17**	2 > 1
7.	Clearly defined policies of the Institute	3.21	3	3.54	5.5	3.32	5	-1.50	N.S.
8.	Emphasis placed on the August in-service	2.87	7	2.95	7	2.89	7	-0.34	N.S.

** Significant beyond the .01 level

Table 6.6
Factors perceived to Promote Staff Development at NAIT
According to Instructional Divisions

Item No.	Facilitating Factor	Bus/App Arts (1) (N = 28) Mean	Rank	Industrial (2) (N = 48) Mean	Rank	Eng. Tech. (3) (N = 33) Mean	Rank	F-Ratio	Sig of Means
1.	Changes in the student enrolment	3.00	8	2.83	8	2.19	8	4.62**	1 < 2, 3
2.	Changes in the Institute's programs	3.75	2	3.31	4	2.97	6	4.66**	1 > 3
3.	Changes occurring in industry	3.93	1	3.39	3	3.57	2	2.14	N.S.
4.	Availability of resources to implement	3.44	3	3.29	5	3.60	1	.81	N.S.
5.	A cooperative attitude among the staff	3.29	6	3.23	6	3.45	4	.44	N.S.
6.	The structure of rewards and incentives	3.18	7	3.44	2	3.47	3	.66	N.S.
7.	Clearly defined policies of the Institute	3.41	4	3.48	1	3.00	5	1.90	N.S.
8.	Emphasis placed on the August in-service	3.35	5	2.85	7	2.57	7	3.53	1 > 3

** Significant at .01 level
* Significant at .05 level

In this respect, both the supervisors and instructors ranked high factor 3 (changes occurring in industry) and factor 4 (availability of resources). Those they ranked low were factor 1 (changes in student enrolment) and factor 8 (emphasis on the August in-service). Among the instructional divisions, differences in the ranking were found for factor 2 (changes in the Institute's program); factor 4 (availability of resources); and factor 6 (the structure of rewards and incentives).

Table 6.7
Spearman Rank Order Correlation Coefficients Between Subgroups
For Factors promoting Staff Development

No.	Subgroups compared	Value of Rho
1.	Instructors and Supervisors	.63*
2.	Business and Applied Arts and Industrial divisions	.40
3.	Business and Applied Arts and Engineering Technology divisions	.45
4.	Industrial and Engineering Technology divisions	.50

* Significant at .05 level

Subgroup comparisons. Examination of Table 6.5 shows that not only were the supervisors' mean scores on all of the eight factors higher than those of the instructors, but their mean scores were 3.50 or higher on six of the factors. In contrast, the mean scores on the same six factors for the instructors ranged between 3.00 and 3.50. Also, the mean scores for four of the factors differed significantly between the two groups. The four were: factor 3 (changes occurring in industry); factor 4 (availability of resources to implement); factor 5 (a cooperative attitude among the staff) and factor 6 (the structure of rewards and incentives).

According to Table 6.6, significant differences in means were also found among the divisions for three factors. The mean of the Engineering Technology division was statistically lower than the means of both the Business and Applied Arts division and the Industrial division

for factor 1 (changes in the student enrolment). For the other two factors -- factor 2 (changes in the Institute's program) and factor 8 (emphasis on the August in-service) -- the Business and Applied Arts division recorded significantly higher means than did the Engineering Technology division.

Factors Considered to Impede Staff Development

The frequency, mean and rank order of responses to the eight factors considered to impede program implementation are reported in Tables 6.8 and 6.9. A mean value above 3.50 was considered to indicate that the factor constituted an obstruction to program implementation.

Total sample. As shown in Table 6.8, four factors with mean scores higher than 3.50 were: factor 1 (inadequate communication); factor 2 (lack of relevance to individual needs); factor 3 (lack of flexibility); and factor 5 (bad timing of development activities). The remaining four factors in Table 6.8 received mean scores above 3.00 but below 3.50. The least perceived obstruction was factor 8 (lack of cost sharing policies), followed by factor 7 (emphasis on organizational requirements).

Ranking of items by subgroups. Table 6.10 shows that the values of the Spearman correlation coefficients between the instructors and the supervisors as well as among the three divisions were significant. This means that all the subgroups tended to perceive the relative importance of the impeding factors in the same way.

Subgroup comparisons. With the exception of factor 4 (indifference to introduction of new ideas), the supervisors mean scores were higher than those of the instructors (Table 6.8). However, none of the differences were statistically significant. According to Table 6.9, significant differences were found between the means of the Industrial and Engineering Technology divisions for factor 4 (indifference to introduction of new ideas) and factor 5 (bad timing of development activities). In both cases, the former received higher means than did the latter.

Table 6.8
Factors perceived to Impede Staff Development at NAIT
According to Staff Positions

Item No.	Impeding Factor	Instructors (1) (N = 72) Mean	Rank	Supervisors (2) (N = 37) Mean	Rank	Total (N = 109) Mean	Rank	t-test Value	Sig of Means
1.	Inadequate communication	3.72	1	3.83	3	3.76	1	-0.47	N.S.
2.	Lack of relevance to individuals' needs	3.54	3	3.56	5	3.54	4	-0.08	N.S.
3.	Lack of flexibility in timetabling	3.59	2	3.95	1	3.71	2	-1.66	N.S.
4.	Indifference to introduction of new ideas	3.35	5	3.25	6	3.31	6	0.43	N.S.
5.	Bad timing of development activities	3.53	4	3.86	2	3.64	3	-1.40	N.S.
6.	Too much reliance on University courses	3.22	6	3.61	4	3.36	5	-1.48	N.S.
7.	Emphasis on organizational requirements	3.10	7	3.14	7	3.12	7	-0.16	N.S.
8.	Lack of costs sharing policies	2.99	8	3.11	8	3.03	8	-0.58	N.S.

Table 6.9
Factors perceived to Impede Staff Development at NAIT
According to Instructional Divisions

Item No.	Impeding Factor	Bus/App. Arts (1) (N = 28) Mean	Rank	Industrial (2) (N = 48) Mean	Rank	Eng. Tech. (3) (N = 33) Mean	Rank	F-Ratio	Sig of Means
1.	Inadequate communication	3.73	1	3.81	2.5	3.71	1	.09	N.S.
2.	Lack of relevancy to individuals' needs	3.41	4	3.60	4.5	3.57	3	.27	N.S.
3.	Lack of flexibility in timetabling	3.56	2	3.81	2.5	3.70	2	.50	N.S.
4.	Indifference to introduction of new ideas	3.33	5	3.58	6	2.87	7.5	4.00*	2 > 3
5.	Bad timing of development activities	3.50	3	3.94	1	3.30	4	3.20	2 > 3
6.	Too much reliance on University courses	3.19	7.5	3.60	4.5	3.10	5	1.72	N.S.
7.	Emphasis on organizational requirements	3.28	6	3.15	7	2.93	6	.79	N.S.
8.	Lack of costs sharing policies	3.19	7.5	3.04	8	2.87	7.5	.68	N.S.

* Significant at .05 level

Table 6.10
Spearman Rank Order Correlation Coefficients Between Subgroups
For Factors Impeding Staff Development

No.	Subgroups compared	Value of Rho
1.	Instructors and Supervisors	.79**
2.	Business and Applied Arts and Industrial divisions	.78**
3.	Business and Applied Arts and Engineering Technology divisions	.83**
4.	Industrial and Engineering Technology divisions	.79**

** Significant beyond .01 level

Discussion of Implementation Factors

The above findings indicate that the factors perceived by the total respondents to contribute most toward the provision and implementation of staff development at NAIT included: (1) changes occurring in industry; (2) availability of resources for implementing new ideas; (3) structure of rewards and incentives at NAIT; and (4) changes in the Institute's programs of studies. In contrast, the factors considered by the staff to constitute a major obstruction included: (1) inadequate communication; (2) lack of flexibility in the timetabling; (3) bad timing of development activities; and (4) lack of relevance to individuals' needs

Perceptual differences. Examination of the Spearman rank order correlation coefficients reported in Tables 6.7 and 6.10 on pages 151 and 155, respectively, shows that both instructors and supervisors perceived the relative importance of the factors affecting implementation in the same way. However, differences in perceptions among the divisions were found regarding the factors that tended to promote implementation of staff development. It seems the differences in perceptions reflected the previous education, areas of specialization, and particular needs of the faculty members. For example, the Business and Applied Arts

division tended to view changes in the student enrolment, industry, and in the Institute programs as important facilitating factors. In effect this group tended to focus on factors that would lead to changes or improvement in managerial practices as well as in the organizational climate. As the group that participated most in industrial leave (Tables B.5.6 and B.5.11 in the Appendix), they also considered changes occurring in industries as the most important facilitating factor.

In contrast, the Industrial division appeared to view clearly defined policies as a facilitating factor. In their perception, bad timing of activities and inadequate communication constituted obstructions to implementation. It seemed that the instructors in this group tended to associate staff development with continuing to pursue university degrees and, therefore, they appeared to be more concerned about how they would achieve this with support from management.

The Engineering Technology division appeared to be a rather "neutral" group that showed little interest in staff development activities. Hence, the factors they perceived to be important facilitators were the basic input variables such as provision for resources, rewards and incentives. This group was also highly trained in their specialized subject areas (Tables B.5.1 and B.5.8) but tended to underrate the humanistic aspect of organizations. The group seemed to exhibit the type of instructors' characteristics which led Weleschuk (1977:112) to conclude that "college instructors tended to consider themselves as professional mathematicians, plant scientists, radiologists etc. rather than professional instructors."

Another important observation from the findings was that none of the subgroups in the study considered changes in the student enrolment to be a major facilitating factor in the staff development effort at NAIT (Table 6.5), even though the differences in the divisional responses were significant. Hence, in contrast to the common belief that the community colleges generally adapted their programs to "meet the needs of a changing society" (Harlacher, 1969:3; cited by Bate and McIntosh, 1972:17), the findings of this study seemed to indicate that technical institutes, instead, provided established programs, especially in the trades, to

equip individuals with skills needed to be in tune with technological practice.

E. Relationships Among the Study Variables

On the assumption that staff development is a complex phenomenon, another purpose of the study was to explore possible relationships among some of the variables used for assessing effectiveness of the program. In this case, it was possible to comment on the usefulness of the assessment model used for the study. The Pearson product-moment correlation coefficients were computed initially to examine the linear relationships between selected pairs of variables. The variables included in the computation were: (1) the 14 items used to assess program outcomes and (2) the six dimensions used to assess approaches to staff development. The former were considered as the dependent variables and the latter as the independent variables. However, to predict the major sources of variations in the outcome measures, a multiple regression analysis was done using the forward-selection stepwise technique (Nie et al., 1975:9).

Results of the Correlations

The Pearson correlation coefficients between selected pairs of variables are reported in Table 6.11. Only four of the coefficients shown in Table 6.11 were significant at the .01 level; all others were significant at the .001 level. The four lower correlation coefficients were between needs assessment, as an independent variable, and the following four outcome measures: (1) increased staff knowledge; (2) increased job satisfaction among staff; (3) improved interaction among staff; and (4) improved teaching methods.

The relatively higher coefficients ($r > .60$) were among the outcomes and the following two dimensions of approaches: (1) managerial practices; and (2) relevant and useful activities. The comparatively lower coefficients ($r < .40$) were found among the dependent variables and the following two independent variables: (1) needs assessment strategies; and (2) achieving

Table 6.11

Pearson Correlations Between Input Variables and Outcomes of Staff Development

		Input Variables					
	Outcomes	D1 Clarity of Objectives	D2 Needs Assessment	D3 Managerial practices	D4 Organizational Climate	D5 Relevant Activities	D6 Achieving Objectives
O1	Student learning	.50**	.36**	.67**	.59**	.62**	.57**
O2	Staff knowledge	.57**	.30*	.67**	.60**	.67**	.57**
O3	Staff confidence	.56**	.32**	.63**	.53**	.67**	.52**
O4	Teaching performance	.58**	.42**	.66**	.58**	.70**	.59**
O5	Professional awareness	.46**	.42**	.54**	.50**	.57**	.42**
O6	Environmental awareness	.48**	.38**	.58**	.56**	.54**	.35**
O7	Institute goals	.43**	.31**	.49**	.48**	.51**	.33**
O8	Team work	.46**	.48**	.64**	.56**	.62**	.36**
O9	Job satisfaction	.51**	.30*	.63**	.56**	.49**	.54**
O10	Staff interaction	.52**	.27*	.49**	.51**	.56**	.55**
O11	Teaching methods	.57**	.25*	.55**	.56**	.64**	.56**
O12	Career development	.43**	.43**	.63**	.55**	.49**	.46**
O13	Professional status	.42**	.42**	.52**	.46**	.48**	.48**
O14	Institute's image	.48**	.42**	.56**	.54**	.63**	.47**

** Significant at .001 level
* Significant at .01 level

program objectives. The other two independent variables, clarity of objectives and organizational climate, showed moderate relationships with the dependent variables.

Prediction of sources of variation. In view of the positive significant relationships found among the dependent and the independent variables, a multiple regression analysis was done using the forward-selection stepwise technique. This technique allowed the independent variables (the six approaches) to be introduced sequentially depending upon their explanatory power (Nie et al., 1975:9).

The results of the multiple regression analysis are reported in Tables B.6.3 to B.6.16 in the Appendix for the 14 outcome measures. The tables show the multiple correlation coefficients (R); coefficients of multiple determination (R^2); and the gain in variance for the approaches which predicted the various outcomes. The independent variables were entered into the computation sequentially for multiple R values at .05 level of significance and beyond. That is, an independent variable with multiple R value below the .05 level of significance was not entered into the computation because its explanatory power in terms of the outcome measure was considered insignificant. For purposes of interpretation, the results reported in the 14 Tables in the Appendix are summarized and presented as Table 6.12. In this table, the coefficients of multiple determination (R^2) attributed to the independent variables (approaches) that were entered in the stepwise computations at the .05 level of significance and beyond are reported for each of the 14 dependent variables (outcomes). The total R^2 (or total variance) in each outcome measure as a criterion that was explained by the independent variables are also reported in the last column of Table 6.12.

Total variance explained. Table 6.12 shows that the total variance explained by the approaches that were entered in the stepwise computations exceeded 50 percent in 6 of the 14 outcome measures. These were teaching performance (61%); staff knowledge (60%); student learning (56%); staff confidence (52%); team work (52%); and teaching methods (52%). For another 6 outcomes, the total variance explained by the approaches ranged from 41 to 48 percent. They were Institute's image (48%); staff interaction (44%); environmental awareness

Table 6.12
Summary of R^2 Values (or Proportion of Variance) in the Outcomes as Criteria Explained by the Independent Variables (Approaches) in the Multiple Regression Analysis Using the Forward-Selection Stepwise Technique

		Independent Variables/ Approaches						
	Dependent Variables/ Outcomes	D1 Clarity of Objectives	D2 Needs Assessment	D3 Managerial practices	D4 Organizational Climate	D5 Relevant Activities	D6 Achieving Objectives	Total R^2/ Total Variance
O1	Student learning			.45		.08	.03	.56
O2	Staff knowledge			.45		.11	.04	.60
O3	Staff confidence			.0		.45		.52
O4	Teaching performance				.10	.49	.02	.61
O5	Professional awareness				.08	.33		.41
O6	Environmental awareness			.33	.05	.05		.43
O7	Institute goals				.09	.26		.35
O8	Team work		.03	.41		.08		.52
O9	Job satisfaction			.39			.03	.42
O10	Staff interaction				.11	.31	.02	.44
O11	Teaching methods				.11	.41		.52
O12	Career development			.41				.41
O13	Professional status			.28		.03	.05	.36
O14	Institute's image				.08	.40		.48
	No. of Outcomes Explained by Approaches	Nil	1	8	7	12	6	

(43%); job satisfaction (42%); professional awareness (41%); and career development (41%). In the case of the remaining two outcomes, the total variance explained in each case by the independent variables was below 40 percent: professional status (36%) and Institute goals.

Explanatory power of the independent variables. According to Table 6.12, relevant activities and managerial practices frequently showed up as the predictors of the outcome measures. Relevant activities, as a predictor, contributed to the explanation of the variations in 12 of the 14 outcome measures. This independent variable explained over 40 percent of the total variance in each of the following four criteria: teaching performance (49%); staff confidence (45%); teaching methods (41%); and Institute's image (40%). For another three outcome measures, it explained over 25 percent of the variation in each case, namely, professional awareness (33%); staff interaction (31%); and Institute goals (26%).

The proportion of the total variance in the other outcomes that were explained by relevant activities ranged from 11 to 3 percent. They were: staff knowledge (11%); student learning (8%); team work (8%); environmental awareness (5%); and professional status (3%). The only two outcomes that relevant activities appeared not to predict were job satisfaction and career development.

Managerial practices explained over 40 percent of the total variance in four criteria: student learning (45%); staff knowledge (45%); team work (41%); and career development (41%). It was the only predictor variable for career development. It also contributed to the explanation of the variations in the following four outcome measures: job satisfaction (39%); environmental awareness (33%); professional status (28%); and staff confidence (7%).

Organizational climate was the third most frequently identified predictor variable of the outcomes. It contributed to the explanations of the total variance in 7 of the 14 outcomes. However, the proportion of variance explained by this independent variable exceeded 10 percent for only three criterion variables: staff interaction (11%); teaching methods (11%); and teaching performance (10%). It also contributed to the explanation of the variations in the following: Institute goals (9%); professional awareness (8%); Institute's image (8%); and

environmental awareness (5%).

As a predictor, achieving objectives contributed to the explanation of the variance in six outcome measures. But the proportion of the variance explained did not exceed 5 percent in any case. The six outcomes were: professional status (5%); staff knowledge (4%); student learning (3%); job satisfaction (3%); teaching performance (2%); and staff interaction (2%).

Needs assessment contributed only to the prediction of the variation in team work (3%). But the independent variable, clarity of objectives, did not appear to contribute to the explanations of the variations in any of the 14 outcomes.

Discussion of Relationships Among Variables

Correlation coefficients, as noted by Borg and Gall (1979:477), "cannot be used to determine cause-and-effect relationships, although they may be used to explore or predict relationships between two variables." Thus, in this study the correlation coefficients were computed for the purpose of measuring the degree of relationships among the variables used in the assessment of effectiveness and to predict possible sources of variations that can later be tested in an experimental design. Any generalization or predictive interpretation of the relationships found in the study must be made with caution.

Implication of the relationships. The results of the Pearson correlation indicated that positive relationships existed between the outcome measures, as dependent variables, and the six dimensions used in assessing effectiveness of approaches as the independent variables. The multiple regression also demonstrated some "degree of linear dependence" of the individual outcomes on the six independent variables or approaches (Nie, et al., 1975:331). Such relationships suggest the strength and usefulness of the assessment model (presented in Chapter III on pages 71 and 73) used for selecting the variables and dimensions for the study. Further examination of the relationships revealed that the gains in multiple correlation coefficients (Tables B.6.3 to B.6.16 in the Appendix) over the bivariate correlations (Table 6.11) were not substantial, suggesting that the independent variables tended to correlate with one another (Sax,

1968:325).

Outcomes related to the approaches. The proportion of the total variance in the individual outcome measures explained by the independent variables exceeded 35 percent indicating that the six approaches appeared to be relevant for the explanation of overall effectiveness of staff development. A further study of the data revealed that the approaches tended to contribute more to the explanation of outcomes related to development of knowledge and instructional skills than they did to outcomes related to development of attitudes and human relations skills. This observation appears to support the findings of the study that the induction program and the university upgrading programs were considered by the staff to be the two effective components of the staff development program at NAIT.

Important predictions. The analysis showed that relevant activities and managerial practices were the two main sources for predicting the variations in the outcomes of staff development. This result was similar to the report by Siegel (1980:137) that program management contributed "56 percent of the variance to the overall success scores" of faculty development. Needs assessment was found to show weak relationships with the outcome measures. It was only team work where it accounted for 3 percent of the total variance. This also reflected the findings of Siegel that no statistically significant relationship existed between overall impact of staff development and the planning and preparation of activities.

However, clarity of objectives did not contribute to the explanation of the variations in any of the 14 outcome measures. This finding differed from one reported by Siegel (1980:137) that clarity of purpose of faculty development explained 3.5 percent of the total variance in the overall success. The literature on innovation also identified clarity of objectives as an important factor in implementation (Gross et al., 1971; Fullan and Pomfret, 1977; Dalin, 1978). This finding of the study, which appeared to differ from evidence in the professional literature, may be explained by two factors. It seems that the instructors at NAIT knew more about the aims of the program than they knew about the variety of activities used because the Institute's orientation program is an employment requirement. Another factor, which relates

to the first, could be a problem of interpretation of the items used to assess this dimension of approach. It may have been difficult for the respondents to differentiate between clarity of objectives and clarity of activities used to promote the objectives of the program.

Summary of the Chapter

The assessment of staff perceptions regarding the effectiveness of the staff development program at NAIT was discussed in this chapter. The assessment was considered in three areas, namely (1) adequacy and appropriateness of the staff development approaches; (2) the nature of program outcomes; and (3) the factors considered to affect provision and implementation of the program.

Approaches to staff development were examined on six dimensions: (1) clarity of objectives; (2) needs assessment; (3) management practices; (4) organizational climate; (5) relevant and useful activities; and (6) achieving the program objectives. In assessing the types of program outcomes, respondents rated fourteen items listed in the questionnaire. The implementation factors were examined from two perspectives: the facilitating factors, and the factors considered to constitute obstruction to the program. Finally, relationships were determined between some of the variables used in assessing program effectiveness.

Chapter VII

SUMMARY, CONCLUSIONS AND IMPLICATIONS

This chapter summarizes the study. The first section provides an overview of the methodology used for the study and in the second, the important findings are presented. The findings are discussed in the third section. Conclusions are presented in the fourth section while the fifth and final section assesses the implications of the study and offers some suggestions for further research.

A. Purpose and Design of the Study

Purpose of the Study

The five purposes of this study were (1) to describe the characteristics of the staff development program for the instructional staff at NAIT; (2) to determine the program's balance of emphasis between meeting institutional requirements and addressing the needs of the individual members; (3) to assess the effectiveness of the program as perceived by the staff; (4) to determine whether differences exist in the perceptions of the program effectiveness among the different constituencies within the instructional staff; and (5) to explore the relationships between perceived effectiveness and the existence of certain input variables.

Conceptual Framework

Two models, based on concepts of systems theory, were developed and employed as frameworks for the assumptions and directions of the study. One model was an adaptation of the Getzels and Guba (1957) social systems theory which provided the framework for comparing the emphasis of the two perspectives on the staff development program at NAIT: institutional requirements and needs of the individual members. The second model was based on the open systems concept and served as the framework for selecting the variables used in

describing the characteristics of the program and in assessing its effectiveness.

The Methodology

The study was based on a survey questionnaire distributed to a stratified sample randomly selected from the instructional staff at NAIT.

The sample. The stratification of the sample was based on three factors: (1) the two categories of instructors and instructional supervisors; (2) the three principal instructional divisions of the Institute; and (3) the fifteen instructional departments. The original sample consisted of 105 instructors and 45 instructional supervisors which yielded a return of 73 percent, consisting of 72 instructors and 38 supervisors.

Data sources. The data for this study were collected with a survey questionnaire consisting of three parts. Part I of the questionnaire was used to gather essential biographical information on the respondents. Part II was structured to provide data for describing the characteristics of the staff development program at NAIT, and Part III was used to assess the perceptions of the staff regarding the effectiveness of the program. Institutional documents were also examined for additional information.

B. Major Findings From the Study

In relation to the purpose of the study, the main findings are summarized below according to the characteristics of the respondents, characteristics of the staff development program, and the perceived effectiveness of the program.

Characteristics of the Respondents

A knowledge of the characteristics of organizational members is essential for the planning of staff development. Therefore, the following relevant characteristics of the respondents are presented.

Composition of respondent group. The respondent group consisted of 44 percent from the Industrial division, 30 percent from the Engineering Technology division, and 26 percent from the Business and Applied Arts division. While 86 percent of the supervisors responded to the questionnaire, only 68 percent of the instructors responded. It was also found that the proportion of supervisors was fairly evenly distributed among the three instructional divisions, but that was not the case for the instructors. All the instructors of the Industrial division (100 percent) responded, whereas 53 percent from the Engineering and Technology division and 49 percent from the Business and Applied Arts division responded.

These findings suggest that interest in staff development was not the same across the subject fields nor for the different instructor positions at NAIT. The high interest shown by the staff of the Industrial division tends to reflect their concern or desire to obtain university degrees which are highly recognized for salary grading by the Institute. However, the findings also appeared to indicate that the supervisors' interest in the program was aimed at the two purposes of staff development: meeting individual personal needs and improving the performance of the organization. In this respect, it is speculated that the interest shown by the non supervisory instructional staff in development activities related more to satisfying their personal needs than with improving the organization. That is, the findings suggest that the program was not meeting its twin goals as management would tend to believe.

Demographic variables. The respondents fell into three age categories: 33 percent in 30 to 40 years category; 43 percent in 41 to 50 years category; and 24 percent were over 50 years of age. The educational qualifications reported were 42 percent journeyman certificates; 9 percent college diplomas; 32 percent bachelor's degrees; and 17 percent graduate diplomas and degrees. The following teacher qualifications were also reported: 77 percent had completed only the NAIT in-service program; 19 had completed university programs in teacher education; and 4 percent had completed other formal teacher's certificate programs.

More than 52 percent reported 10 years or longer service at NAIT. The supervisors reported longer service: 89 percent, as compared to 33 percent of instructors, had 10 years or

more service. Whereas 74 percent indicated they had 5 years or more working experience in jobs related to the courses they taught at NAIT, only 4 percent reported no working experience before employment at NAIT. Most of the staff with more work-related experience were trade instructors.

The above reported statistics about the sample have implications for the program management in regard to needs assessment and choice of development activities. Because many instructors completed their training some years ago, they require information and assistance from the program management to enable them to determine their professional development needs. Also the fact that about 80 percent of the respondents have no formal teacher education, except the August orientation program, suggests that the program management must continuously assess the needs for instructional development. These needs ought to be addressed through the various in-service activities such as the June in-service program.

However, this study revealed two weaknesses in the June program which must be carefully considered in future planning. One concerns the timing of the program to avoid clashes with timetable commitments. In this regard, July may be a suitable period for the program. Another consideration is to have separate or different sessions of the program for the main instructional divisions or groups of instructional departments. The other weakness identified with the June in-service program is in connection with relevant activities, especially provisions for individualized projects. This implies that the content of in-service activities for the already employed staff must not be a repetition of the August orientation program used for newly employed instructors. Instead, the former must have a greater variety of activities to meet the various needs of the staff.

Participation in development activities. Thirty percent of the respondents were enrolled in formal continuing education, and all were at Faculties of Education. As many as 64 percent of those involved in continuing education were staff from the Industrial division, suggesting that these individuals were continuing their education because they wanted to obtain university degrees or to become professional teachers. It was found that while 32 percent of

the respondents indicated they had been granted various durations of educational leave, only 22 percent reported industrial leave. More supervisors reported taking leave of absence than did instructors for both educational and technical upgrading.

It appears the high percentage of journeyman certificates reported by the respondents, may explain the relatively higher number of the program participants being involved in university upgrading. But the results also showed that, although technological changes were rapid, instructors' participation in technical upgrading was low. It is evident that the interest and level of participation of staff in development activities do not reflect so much the needs of the Institute as they do the needs of individual instructors. As a technological institution, it was expected that staff upgrading could have taken place in faculties such as Science, Engineering, Agriculture, Business, Law, and Home Economics where research in the instructors' subject fields is the major concern. Instead, the results of this study indicated that staff upgrading was done mostly in Faculties of Education. These findings may be explained partly by the Institute's policies on rewards and incentives that tend to favour university degrees. Another explanation may lie in the universities' admission and program policies which probably make it easier for the instructional staff to enrol in the Faculties of Education than they are able to enrol in the other university faculties.

Characteristics of the Program

The characteristics of the staff development program at NAIT are summarized below in terms of its aims, policies, funding, rewards, activities and implementation strategies.

Program aims. The respondents tended to view the primary objectives of the program as management efforts to meet the Institute's requirements and, therefore, they tended to see the objectives addressing individual personal needs as secondary. The staff probably developed such an attitude toward the program because of the special attention given to the August in-service activity by the program management. The implication of this finding is that staff development at NAIT requires redefinition in its objectives and activities to reflect both

institutional requirements and personal needs of staff.

Policies. The study revealed that NAIT has policies to govern staff development. But because most of the policies are worked into the academic staff collective agreement, they tend to emphasize issues of released time and conditions for professional development leave. Consequently, the policies do not address sufficiently the types of activities that should be used to implement the program objectives.

Funding. The two main sources of funds are from (1) the Institute's budget and (2) individuals' personal contribution of time and money. The results tended to suggest that the cost of studying at the universities and other educational institutions was mainly an individual member's responsibility. But the findings also revealed that the organization contributed to staff development cost by granting study leave with or without pay; by arranging released time; and by organizing in-service activities at no cost to staff.

Rewards. Salary increases are the main rewards for participation in development activities. Promotions are at times used as a reward but how that system operates seems not to be clear to many staff, especially the instructors. Another incentive is the maintenance of employment benefits while on study leave. It is evident that the Institute's reward system, which is closely related to formal qualifications, is very traditional or conventional. As a result, the reward system appears to influence the Institute's staff development in two ways: it determines those who are likely to benefit most and which activities will result in higher rewards. These two factors tend to explain the higher enrolment of staff of the Industrial division in the university degree programs. Therefore, to encourage participation of all staff in development activities, management should explore the use of other reward systems. One possibility is to recognize a non-formal individualized project for rewards. Another is to search for non-monetary rewards, such as creating various role positions in the organization that are not related to promotions. This could help erode the tradition of monetary rewards as it may be satisfying for some staff to improve themselves in order to be in these status role positions.

Cost elements. According to the staff collective agreement the cost of staff development at NAIT is described in terms of the following elements: (1) study leave with or without pay; (2) released time; (3) exemption from paying tuition fees for certain Institute courses; and (4) fee for membership in professional associations. One cost element which appears to be missing in the program is support for individualized projects such as research. The results of this study suggest that such development activities could promote the interest and participation of those staff members with relatively higher educational qualifications.

Needs assessment. Generally, individual faculty members were given the opportunity to determine their own professional needs and to pursue them, as far as individual upgrading was concerned. But the needs for formal and Institute-based activities appeared to be determined by the program management or in consultation with the instructional departments. When individual faculty members are competent to determine their own professional needs it is appropriate to encourage them to do so. However, those faculty members who have no teacher education or who have been out of formal education programs for a long time, usually require guidance and counselling to be able to make such decisions effectively. The findings suggested that these services were not available. This might have contributed to the low participation of staff in those development activities where the needs appeared to be greatest.

Types of activities. Formal and Institute-based activities were the main characteristics of the program, while informal and individualized activities were rarely used. The August in-service activity is associated highly with the program because of the major role it played for two reasons: (1) it was an employment requirement; and (2) as an orientation program, it provided essential knowledge and skills to the instructors without teacher education. Although the June in-service program was also considered useful, it was not viewed to be as successful as the August in-service activity. The former was also criticized for its timing: some felt that it clashed with time table commitments.

Program coordination. Staff development is the responsibility of the Institute's professional development unit h[illegible]led by the Manager of Staff Training and Personnel

Development. There is also the Staff Development Committee, of which the Vice-President, Instruction, is the chairman. The committee is responsible for the approval of applications for professional development leave. Nevertheless, the findings showed that the respondents tended to see the role of these two bodies to be minimal in program implementation. Instead, implementation was identified more with the instructional departments and the Academic Staff Association. The former is involved in instructional skills development. and the latter negotiates policies relating to rewards and benefits.

The above findings suggest two issues of concern for policy development and program planning. First, linking policies to collective agreements tends to emphasize rewards and benefits. Thus little attention is given to policies concerned with what should constitute the activities of the staff development program. Second, as the program management becomes preoccupied with control of resources and implementation of formal activities, it tends to lose sight of the importance of meeting individual differences. But in technical educational institutes, these individual differences are a significant concern because great variation exists among the instructional staff in terms of educational and professional skill levels.

Human resources. The respondents indicated that the expertise of the Institute's personnel was not being utilized adequately in program implementation. Similarly, the results indicated that the program management was not making full use of resources and facilities available in the universities. The first was a concern expressed mostly by the staff members with relatively higher qualifications and this suggested that they disapproved of the existing implementation strategies. The second was a general concern which, as indicated by the results of the study, was related to university programs, research facilities and personnel. These findings suggest that the level of staff participation is likely to improve if staff become more involved in the planning and implementation of the program.

Orientation of staff development at NAIT The orientation of the program was assessed on five factors derived from the study. The results showed high orientation on all three factors addressing institutional requirements, namely, institution-focused, resource

control, and traditional practices. The orientation was also high on one of the two measures of personal needs, that is, voluntary participation; but it was low on the other -- personal development. The results suggested that the staff development program at NAIT emphasized more of the institutional requirements than the individuals' personal needs.

Comparing this finding with the other findings of the study, regarding the highly participative group and the types of activities they were involved in, suggests that there was a discrepancy between what the program was achieving and the expected goals of the program. In terms of participation and interest, the program was not meeting the aim of organizational improvement. The findings also showed that, in the perception of the staff, the program was not aimed at helping them meet their individual personal needs. This discrepancy between the perceived and expected goals tends to indicate that the program was not meeting its goals as expected by both management and staff.

Perceived Effectiveness of the Program

How the respondents perceived the effectiveness of various aspects of staff development at NAIT is summarized below.

Effectiveness of approaches. The study showed that the respondents were only partially clear about the definition and objectives of the program. It also revealed that on the whole respondents appeared to be satisfied with the strategies that provided opportunity to individual faculty members to determine their own professional needs and to pursue them. However, the general view was that the cooperative and team approaches for determining group needs could be improved. Despite the staff approval for determining their own professional needs, this study indicates that the strategy has not produced effective and useful results as management tends to believe. The reason is that there are some faculty who, because they have been out of formal education programs for a long time or who have no teacher education, require administrative leadership and guidance in assessing their development needs. But it appears these individuals did not receive much guidance from the program management. As a

result of lack of such guidance, the program tends to emphasize university upgrading in teacher education and seems to give less attention to upgrading in technical fields where the greatest needs appear to be.

The results further indicated that the respondents regarded the overall organizational structure and the climate of the Institute to be favourable for implementation of the program. That is, the involvement of the instructional departments and the organizational arrangements provided by the Institute's management for staff development were satisfactory. But management of the program itself was perceived to be only partially effective. The role of the program management was considered adequate in the acquisition of physical resources for implementation, but respondents were less satisfied with the assistance provided by management for upgrading their knowledge in the technical fields. In this respect, the system, which mainly provided for rewarding university upgrading, appeared to be satisfactory to some members. There were others, however, who wanted to see that upgrading in the technical fields was rewarded equally.

Another finding was that the formal and traditional activities or approaches used for implementing the program were considered to be effective. In comparison, the informal and individualized approaches were seen to be less effective. Examples of the former were in-service programs, workshops and study leave; and of the latter industrial leave and instructor observation. In this regard, the major objective that the program was perceived to be pursuing effectively included university upgrading and providing basic instructional skills to newly recruited instructors. In contrast, personal development objectives, such as learning human relations skills and upgrading in the technical fields, were seen to be pursued less effectively.

The above findings serve to identify issues that require management attention in future planning. First, individual differences must be taken into consideration at all stages of planning and implementation. Second, there should be more variety in the activities used to promote staff development. The third, and most difficult issue to resolve, is to develop

alternative and/or additional reward systems. Salary increases alone have their limitations. By accepting that inner-motivation contributes to participation in development activities, some form of non-monetary reward or benefit could also be used. For example, if staff could be assigned short-term administrative roles in areas where they have acquired new knowledge or training it could bring personal satisfaction. The strategy could have the additional advantage of testing aptitude for future promotion.

Program outcomes. In the opinion of the respondents the most important outcomes of the staff development program at NAIT included: (1) improved staff knowledge; (2) improved staff confidence; and (3) improved teaching performance. Where the effect of the program was perceived to be the least included: (1) promoting team work; (2) achieving interaction among the staff; and (3) creating sufficient awareness of social and economic factors that affect the work of the Institute. It is evident that the instructional staff are aware of the impact of the formal in-service activities, especially the August in-service program, because it is an orientation program. But the findings also indicate that the program is more directed at developing instructional skills than it is helping with the development of human relations skills.

Factors affecting implementation. The factors perceived by the respondents to promote the program included: (1) changes occurring in industry; (2) availability of resources for implementation; (3) structure of rewards and incentives; and (4) changes in the Institute's program of studies. The factors perceived to impede the program included: (1) inadequate communication; (2) lack of flexibility in timetabling; (3) poor timing of development activities; and (4) lack of relevance to individuals' needs. These findings reveal that whereas the Institute has provided adequate facilities for staff development the implementation strategies are not adequate to realize the desired goals.

Differences in perceptions among the subgroups. There were statistically significant differences in perceptions of program effectiveness among the subgroups, regarding some of the program approaches. Between the supervisors and instructors, differences were found in

perception of clarity of purposes of the program and usefulness of the August in-service activity. The instructors reported less clarity of purpose than did the supervisors. Similarly, they considered the August in-service activity to be less useful than did the supervisors. Significant differences also existed among the instructional divisions on issues concerning management practices, reward systems, and use of relevant activities. The Business and Applied Arts division, for instance, seemed to have a better understanding of the role of the program management than did the other two divisions. The staff of this division also found the August in-service activity more useful than the Engineering Technology division. The Industrial division reported satisfaction with rewarding university upgrading, while the other two divisions seemed to be less satisfied with the system. Instead, they wanted to see the use of other rewards that were not attached to salary increases.

There were no differences in perceptions among the subgroups regarding the main factors impeding implementation: inadequate communication and lack of relevant activities. However, there were differences among them regarding the factors that tended to promote implementation. For example, the Business and Applied Arts division tended to view changes in student enrolment, in industry, and in the Institute's programs of studies as the important facilitating factors. The Industrial division considered a well defined policy as a facilitating factor. The Engineering Technology division considered, as facilitating factors, the following input variables: physical resources, rewards and incentives. These differences appear to relate to the previous education of the groups which, in turn, reflect in their expressed professional development needs. Consequently, the program management must take account of such differences when assessing needs and choosing activities for the program.

Relationships among the assessment variables. The Pearson correlation method showed significantly (at the .01 level and beyond) positive relationships among the 14 measures of outcomes (as the dependent variables) and the six dimensions of approaches (as the independent variables) used in the study. Further analysis with the multiple regression technique revealed that managerial practices and relevant activities were the two major sources

for predicting the variations in the outcomes of staff development. In particular, management practices accounted for greater proportions of most of the variance in the important outcomes, such as student learning; staff knowledge; team work; career development; and job satisfaction. Organizational climate also contributed to explain the variations in 7 of the 14 outcomes; but it was not as important as the above-mentioned two approaches. Needs assessment contributed only to the explanation of the total variance in team work; and clarity of objectives did not contribute to the explanation of variations in any outcome measure.

Two reasons might explain the failure of the variable clarity of objectives to contribute to the explanation of the variations in the outcomes. Respondents could have interpreted lack of clarity of objectives to mean lack of clarity of program activities. Second, because of the degree of awareness created by the Institute's induction or orientation program, it appears the staff know more about the goals of staff development than they do about the types of activities used to achieve the goals. This is likely to create some confusion in the minds of the staff regarding the purpose of the program.

C. Discussion of the Findings

Staff development as an approach to improve organizational effectiveness is so complex that no single study can cover all its aspects. This study focused on staff development at NAIT and so the findings have relevance mainly for improving the program at the Institute. But some of the findings extend beyond practices at NAIT. The discussion which follows addresses these two considerations by focusing on four areas: (1) the effect of faculty characteristics on staff development; (2) the role of the organization; (3) current policy issues; and (4) the usefulness of the models used in the study.

Effect of Faculty Characteristics

This study indicates that the characteristics of faculty affect staff development in educational organizations. The most important characteristic that appears to affect

participation in, and the nature of, activities is the difference in educational qualifications of the staff. Staff position in the organization also appears to relate to the interest shown in the program and the individual members' knowledge of various aspects of the program.

Differences in educational qualifications. The importance of differences in the educational qualifications of faculty as a factor in the planning and implementation of staff development is supported by other studies (Weleschuk, 1977; McLauglin and Marsh, 1978; Fordham and Ainley, 1980; Chesley, 1983). In this study, the data revealed that even the differences in participation across the instructional divisions were due to differences in the level of educational qualifications. Trade instructors were involved in university upgrading because fewer of them had university degrees than the instructors of technology and service programs. This suggests that differences in qualifications are of particular importance to the planners of staff development in the community colleges and technical institutes since the composition of the staff in these institutions tends to be more heterogeneous in terms of educational backgrounds than the staff in other institutions such as the liberal arts colleges and universities.

However, the influence of the factor of educational qualifications can lead to both positive and negative outcomes. On the one hand, if the goals, objectives and activities are perceived by a group of staff to meet their individual special needs, that group tends to exhibit high interest and participation. On the other hand, if the program becomes identified strongly with improving educational qualifications, there is danger of losing sight of other desirable objectives of the program.

Examples of both effects were evident in this study. The staff of the Industrial division were more involved because the program emphasis met their needs for pursuing university degrees. But the staff of the other two divisions felt their special needs were being neglected; as a result, the latter group did not show as much interest as the former group.

Staff positions in the organization. Studies of faculty development in universities and liberal arts colleges indicate that the relationship between participation in development activities and status of faculty members is not clear (Konrad, 1983; O'Connell, 1983). The findings of

this study are also inconclusive on the relationship between participation and staff position. However, it was found that the supervisory staff tend to show higher interest in the program and have more knowledge about the program activities than the non-supervisory staff do. In other words, staff position in the organization tends to affect awareness of, and interest in, faculty development. In this case, the supervisory staff are in a better position to receive more information. Because of their position in the organization, supervisors tend to feel that it is their responsibility to improve teaching and learning and, therefore, they become more concerned about staff development issues.

Role of the Organization

The role of effective management in achieving successful staff development is emphasized in the professional literature (McLauglin and Marsh, 1978; Siegel, 1980; Mazzarella, 1980; Campbell, 1983). But the role of the program leader is found to be even more crucial. For instance, Siegel (1980: 143) reported that "the management of the program in particular seems to be even more critical for faculty development success than the general management of the institution." Other organizational variables that seem important, as evident from this study, are communication and the provision of varied program activities.

Program leadership. The results of the study indicate that while the general organizational climate may be favourable for promoting the program, the degree of effectiveness usually mirrors the staff perceptions of the role played by the program management. The data revealed that management practices contributed to the explanation of the variations in the most important outcomes such as student learning, staff knowledge, team work and job satisfaction. Such practices accounted for 41 percent of the total variance in career development. These findings support the professional literature which holds that effective program management is absolutely essential for the success of staff development.

The above discussion raises an issue concerning faculty participation in the planning and implementation of the program. The findings of the study suggest that the level of

participation in assessing development needs and in pursuing those needs, depends upon the background of faculty, such as the type and level of education as well as previous experience. In other words, for some categories of staff the opportunity provided to make their own decisions without much assistance is helpful. But for others, guidance and direction by the program management are necessary to enable the individual to make appropriate decisions.

Communication. To achieve effective communication in social organizations, such as educational institutions, involves a complex process. The professional literature indicates that individuals at different developmental stages handle information differently (Hunt et al., 1974; Schiffer, 1978; Bents and Howey, 1981). This should be of concern to administrators in postsecondary education, especially in the community colleges and technical institutes where greater differences exist in the backgrounds of the instructional staff. As is evident from this study, the differences in the processing of information among the different categories of staff are reflected in perceptions of program effectiveness regarding: (1) the role of management; (2) what constitute the important aspects of the program; and (3) criteria for assessing effectiveness. Using various strategies to communicate information about staff development is essential. Such strategies could include: published reports; group discussion for value clarification; individual consultation; and the usual circulars and directives of the organization.

Another factor which poses a problem in communication relates to the structure of the organization. As found in this study and supported by other evidence (Yorke, 1977; Fordham and Ainley, 1980), the hierarchical organizational structure of technical education affects the nature and effectiveness of communication and the incentive system. In such a structure, seniority and standard procedures seem to dominate. But hierarchical structure does not always have a negative effect. For instance, it can encourage supervisory staff to accept more responsibilities for program implementation, as was evidenced in this study. In this respect, the interest and concern of supervisors can be used to achieve effective staff development because of their influential positions in the organization.

Provision for variety. One of the findings of this study was the lack of diversification in the program activities. The current state of the economy, which is affecting the job market, is bringing various categories of instructors into the organizations of postsecondary education. This situation highlights the importance of endeavouring to meet the special needs of the different groups of instructors. For instance, it was found that while one group of staff considered the induction program at NAIT to be useful, another considered the program to be unsuitable; suggesting that institutions must consider a variety of induction programs to suit the different groups of faculty.

The findings of this study also suggest that the traditional view of staff development as a means to correct deficiencies in the instructor is not always valid. The level of qualifications of the present instructional staff suggests that there is opportunity now for colleges and technical institutes to promote staff involvement in research and innovative activities to make those who are good even better.

Evaluation of instruction appears to be missing or underutilized in the staff development program at NAIT. While such a finding may sound surprising, the body of knowledge in the professional literature seems to support it (Donald, 1978:45; Mazzarella, 1980; O'Connell, 1980). The reason for low emphasis on evaluation, according to O'Connell, is that the role of evaluation is not clear among faculty because of the two uses of information from evaluation: formative and summative. The latter usually meets with negative attitudes from faculty. This means that the formative aspects of evaluation should be emphasized and developed.

Policy Matters

The findings support the trend reported in the staff development literature that faculty associations are increasingly becoming involved in initiating and developing policies for professional development. This process for developing policies has both advantages and disadvantages.

Concerning the advantages, the move provides the opportunity for faculty involvement in decision making which is an important factor in successful program implementation. Faculty associations usually negotiate improved incentives and rewards, and these are likely to improve the level of participation in development activities. The overall effect may be to achieve a more appropriate balance between organizational and individual competence building activities in the program.

But it is evident from this study and others reported by Adkins (1983) and Bailey (1983) that faculty associations are usually involved mainly in making policies on staff benefits. Consequently, little attention seems to be given to policies on other issues, such as what activities are useful for instructional improvement, and which approaches should be used to evaluate instruction? In other words, as the policy making becomes attached too closely to collective bargaining, the risk of deviating from the main purpose of staff development -- to improve instruction -- rises.

Non-monetary rewards. Lytle (1983:30) has questioned the role of salary increments as a reward for participation in development activities. Other research evidence indicates that inner-motivation of faculty tends to move them to seek professional improvement (O'Connell, 1983; Morgan, 1984). The results of the study show that the Institute's reward system for staff development is of the traditional type, that is, attached to formal qualifications and salary increments. Such a system tends to favour individuals with lower educational qualifications and new faculty members at the beginning of the salary structure. It does not provide equivalent incentives for staff with relatively higher qualifications and others at the maximum point of the salary structure.

Variations in the backgrounds, experience and qualifications of instructors in postsecondary education raise the issue of alternate rewards and incentives, other than salary increments. Educational administrators should also recognize that education has entered a period of environmental scarcity -- declining enrolment, fewer resources, and decrease in faculty mobility -- and that such scarcity can serve as an opportunity for innovation and

adaptation. Two suggestions are worth consideration in this respect. One is to provide short-term administrative roles to serve as career development incentives. Another is to involve other institutions and agencies in staff development on a cooperative basis. That is, exchange programs and collaborative efforts in research and projects could lead to effective staff development.

The Models Used in the Study

Two models were developed and employed to provide the frameworks of assumptions and directions for the study. One model related to the two perspectives of (1) meeting organizational requirements and (2) addressing the needs of individual members. The other was an evaluation model used in the selection of variables for describing the characteristics of the program and for assessing its effectiveness.

The two-perspective model. Two main assumptions form the basis of this model: (1) that staff development must simultaneously address organizational requirements and the needs of individuals; and (2) that the two components can be analyzed in terms of the three characteristics of the program: aims, control, and activities. When the variables used in describing the three program characteristics were factor analyzed, the analysis produced five factors describing the orientation of the program. The factors were: institution-focused; resource control; traditional practices; voluntary participation; and personal development.

These results seem to support the proposition that organization and individual competence are two perspectives for describing staff development since the two components are reflected in the five factors. The data revealed that the two components are interactive. The five factors together accounted for 67 percent of the total variance. The institution-focused factor alone explained over 22 percent of the total variance suggesting that it is the best factor for describing the orientation of staff development. The proportion of total variance explained by each of the remaining four factors were voluntary participation (14.9%); personal development (11.5%); resource control (10.3%); and traditional practices (7.7%). It seems that

the traditional practices factor is weak (in comparison with the others) in describing program orientation.

Examination of the orientation of the program at NAIT shows that the emphasis is on institutional requirements. This finding is consistent with other results of the study that the program develops instructional competence. The results also show that voluntary participation is an important characteristic of the program; supporting the assumption that faculty who are inner-motivated are moved to seek professional improvement. Thus, the model used in assessing the program orientation has confirmed the presence of the two perspectives of staff development: institutional and personal competence.

However, there seems to be a discrepancy between the perception of the staff regarding the orientation of the program toward personal development and the types of activities they identified as being important components of the program. The high involvement in university degree programs by instructors in the Industrial division suggested a high orientation on the personal development factor. But the assessment of staff perceptions of the program showed a low orientation on the personal factor scale. This discrepancy could be interpreted to mean that the activities preferred by the staff at NAIT were not necessarily the activities in which they were involved.

In view of the confirmation of the model, it can be concluded that the two-perspective model is relevant and useful for describing the orientation of staff development. Within the limitations of the study (only 21 items were used and few items loaded on more than one factor), it can be said that the factors, at least the four which accounted for more than 10 percent of the total variance, are relevant for describing the two perspectives of staff development. The factors also seem to provide suitable scales for assessing program orientation on the two components of institutional and personal competence.

The assessment model. The strength and usefulness of the assessment model were examined in terms of the relationships found among the six approaches to staff development (independent variables) and the 14 outcomes (dependent variables). The Pearson correlation

showed that all pairs of dependent and independent variables correlated significantly at the .01 level or beyond indicating that all the variables selected with the help of the model seem to relate to staff development.

The results of the multiple regression analysis indicate that managerial practices and relevant activities were the two most important predictors of the variations in the 14 outcome measures. Managerial practices explained the highest proportion of the total variance in most of the important outcomes: student learning (45%); staff knowledge (45%); team work (41%); career development (41%); job satisfaction (39%); and environmental awareness (33%). Relevant activities also accounted for more than 30 percent of the variations in the following outcomes: teaching performance (49%); staff confidence (45%); teaching methods (41%); Institute's image (40%); professional awareness (33%); and staff interaction (31%).

These findings agree with research evidence regarding the variables that contribute to success of faculty development (Siegel, 1980), and thus confirm the applicability of the assessment model. The result which showed that needs assessment, as an independent variable, explained 3 percent of the total variance for only team work is also consistent with Siegel's findings. However, the data revealed that clarity of objectives, used as an independent variable, did not predict any of the 14 outcomes. This result, examined in relation with other research in the literature on innovation (Gross et al., 1971), seems to be contradictory. Siegel (1980:137) found that clarity of purpose explained 3.5 percent of the total variance in the success of faculty development. An attempt to reconcile the difference is necessary. First, a close examination of the items used to assess this dimension reveals that they may describe program characteristics more than purpose. If this is so, then it is possible that the items were not interpreted by the respondents to refer to clarity of purpose but something else, such as clarity about the types of activities. Second, the respondents' perceptual differences between real and expected goals could also explain the result. That is, the staff expect a strong program on personal development while the Institute's program emphasizes organizational development.

Despite this slight variation in the findings, it can be concluded that the rationale of the model is appropriate and the model is useful in assessment of the effectiveness of staff development. It is important to note that the structure of the model is flexible and so it can be used for any kind of staff development program.

D. Conclusions

Based on the findings of this study and the foregoing discussion the following conclusions are reached regarding the program at NAIT and staff development in general.

Instructor Characteristics and Development

The characteristics of the respondents reported in the study tend to lead to the following conclusions regarding instructor development.

1. The proportion of the subgroups that responded to the questionnaire revealed that the interest and participation in staff development were not the same across instructor positions, instructional divisions and subject areas. This suggests that the program was not meeting equally the needs of all the subgroups. Therefore, the reward system and activities currently used for the program must be examined and improved to meet the needs of all faculty.
2. The qualifications reported by the respondents tended to confirm the Institute's principle of employing instructional staff on the basis of their subject matter knowledge and their previous work experience. That is, teacher education was not a criterion for employment at NAIT. This finding draws attention to the value of a strong orientation program like that provided through the August in-service activity as an employment requirement for newly recruited staff. However, the study shows that the objectives and activities of the August in-service program must be reviewed regularly because the qualifications of new staff appear to be improving in recent years.
3. The type of continuing education reported, that is, upgrading in Faculties of Education,

and the category of staff involved (those without degrees) implies that participation in formal continuing education was more of a desire to meet individual personal needs than to improve the organization. In this case, it was a desire to obtain university degrees because they are adequately rewarded by the Institute's salary structure.

4. While the upgrading of individual staff was mainly at the Faculties of Education, the age and length of service of the respondents demonstrates the desirability of encouraging the upgrading of instructors' knowledge in technical fields as well, where there are rapid changes.

Some Characteristics of the Program

The results of the study indicated that staff development is an important organizational consideration at NAIT. Both the Institute management and the Academic Staff Association attach importance to it. The former demonstrates its commitment through structural arrangements within the organization and also policies regarding the provision of resources and incentives. The latter pursues and improves staff development provisions through negotiations in the collective agreement.

In view of this institutional support, and based on the findings of this study, the following conclusions were reached regarding certain characteristics of the program.

1. The instructional staff at NAIT appeared to be more aware of matters concerning cost sharing policies than they were about matters dealing with sources of funds. This reflects the increasing role of the Academic Staff Association in negotiating staff development benefits. This is a trend that is growing in postsecondary education and which requires careful attention by administrators so that staff development does not deviate from its basic purpose of improving instruction and learning.
2. The respondents tended to believe that the formal and Institute-focused activities generally helped them to develop relevant knowledge, skills and attitudes related to their instructional responsibilities. This favourable attitude toward formal activities is an

outcome of the August in-service activity which is seen to provide the necessary orientation to newly recruited staff who often do not have teacher education. In contrast, informal and individualized activities were not seen as characteristics of the program. Nor did the instructional staff know much about the types of informal activities that were accepted for rewards. Consequently, they tended to view the program primarily as management effort to achieve effective organization through defined objectives and activities which are controlled through the allocation of resources.

3. The results showed that all the subgroups tended to see the relative importance of the various characteristics of the program in the same way. That is, they all rated high the items on policies and funding and rated low the items describing strategies. However, differences were found between the supervisors and instructors regarding the level of awareness of certain aspects of the program. The supervisors appeared to be better informed of financial policies and resources for individualized development activities than were the instructors. Thus, the difference in level of awareness was more a result of structural characteristics of the organization and the flow of information than of one's field of specialization. One's position in the organization tends to determine the amount of information that was available to the individual.

Perceptions of Program Effectiveness

Effective approaches. The following conclusions were deduced from the findings:

1. Despite the attention given to staff development at NAIT a number of staff did not participate in any development activities for various reasons. These reasons included (a) not being clear about program objectives and activities, (b) poor timing of Institute-based in-service programs, and (c) lack of opportunity for informal and individualized activities. Thus, the groups least involved in development activities also reported least clarity regarding the program objectives.
2. Although the program was considered to be meeting the objectives of university upgrading

and institution-based in-service programs, there were other desirable objectives that it did not address adequately. These include upgrading of knowledge in the technical fields, career development, and other individualized activities such as research projects and instructor observation or evaluation.

3. The rewards provided by NAIT for participation in staff development were mainly in the form of salary increases to the individuals. But the lack of consensus regarding the effectiveness of the approach indicated a weakness in the Institute's reward system. Because the system was attached closely to university upgrading it tended to neglect upgrading in the technical fields which was an equally important aspect of instructor development. The reward system also seemed to create frustration and, thereby discouraged those staff members with longer service and those with relatively higher qualifications from participating in development activities.

Program outcomes. Because most of the newly recruited instructional staff did not have teacher education, the August in-service program was perceived to provide vital knowledge and skills required for the instructors' job. In this connection, the most important outcome of the program was perceived by most staff to relate to improvement of staff performance in their instructional duties. In contrast, the staff who had previous teacher education and others with relatively higher educational qualifications, considered the effect of the program to be weak in developing human relations skills. The program also failed to provide adequate opportunities for meeting individual personal needs related to career development. It should not be overlooked, that the August in-service program offers only introductory preparation for instruction. At best it is only a beginning and subsequent developmental activities ought to be developed and made available.

Implementation factors. The most important factors considered by the respondents to promote implementation of staff development at NAIT were technological changes and rewards provided to participants. But the findings indicated that lack of program information, guidance, and limited diversification in the informal approaches constituted obstructions to

program implementation. The facilitating factors -- technological changes and rewards for participation -- imply that staff upgrading in their technical fields could be encouraged by restructuring the reward policies to recognize attendance at non-formal programs. The results further imply that management could improve program effectiveness through diversification of activities. Similarly, staff participation could be improved by providing adequate information on the objectives and achievements of the program.

Constituency differences. The study showed that there was more agreement among the subgroups regarding the effectiveness of various aspects of the program than there was disagreement. But the differences are important for the planning and implementation of staff development because they show up in staff positions (whether instructors or supervisors) within the organizational structure and in one's field of specialization. Whereas the major differences between the supervisors and instructors existed in the clarity of purposes of the program and usefulness of in-service activities, the differences among the instructional divisions were related to concerns of program management and the reward system for participation.

The findings give rise to two issues that require management attention. First, it appears that the instructors do not receive as much information on staff development as do the supervisors. Therefore, management needs to improve communication strategies. Second, in assessing development needs, management must take into consideration the previous education and training of the major instructional groups of the Institute. In other words, the special needs of individuals and groups should be given more attention.

The Models Used in the Study

The results suggest that the two models that provided the conceptual frameworks for the study were relevant and useful.

The two-perspective model. The findings reported from the two-perspective model, that the staff development program at NAIT emphasized the institutional requirements rather

than personal needs, were consistent throughout the study. This indicates that staff development can be analyzed from two perspectives: institutional requirements and individual personal needs. The results also indicate that the two components can be compared on a number of continuum variables or scales which describe the three basic characteristics of the program: purpose, management control, and types of activities. Five such scales were derived as: institution-focused; resource control; traditional practices; voluntary participation; and personal development. The first three scales address institutional requirements and the last two emphasize individual personal needs. The institution-focused factor was the strongest scale for describing the program orientation and the traditional practices factor was the weakest of the five.

The assessment model. Positive relationships were found among the outcome measures and the dimensions used in assessing effectiveness of approaches. The results of the study also showed that managerial practices, relevant activities and organizational climate were the major sources for predicting the outcomes of staff development. Needs assessment and clarity of objectives were found to be poor predictors of the outcome measures. Such relationships, which appear to be supported by evidence in the literature, confirm the strength and usefulness of the assessment model used for selecting the variables and dimensions for this study.

E. Implications and Suggestions

This study focused on staff development at NAIT. In this regard, the findings contribute to the view that research on staff development must be context specific. But the results have both practical and theoretical implications. For instance, the findings on (1) the effect of differences in staff qualifications; (2) restructuring of reward systems away from attachment to formal qualifications; and (3) the need for diversification in development activities are of prime concern to scholars and those responsible for staff development. But they also provide useful information for improving the program at NAIT. The Institute

management should also be cognizant of the fact that while instructional improvement is the main purpose of staff development, the study revealed that evaluation of instruction was not included as an important component of the program.

Implications for Future Practices

It is evident from this study that staff development is receiving attention by both the Institute's management and the Academic Staff Association of NAIT. Because staff development is a complex phenomenon, a study of this nature is likely to reveal some concerns that can assist the management and program coordinators to improve upon their practices. The following implications are advanced for the consideration of the management at NAIT.

1. An effort to develop a more comprehensive definition of staff development seems to be necessary. Such a definition must not only address the goals, objectives and activities of the program, but it must take into account the effect of the low rate of staff turnover, general technological changes, differences in individual needs, and the necessity for career development or enhancement within the Institute. In other words, the two components, organizational and individual competence, should be considered when identifying objectives as well as when selecting activities and control strategies.
2. The differences in the perceived needs among the instructional staff and the variations in the level of interest and participation tend to suggest that more variety is required in the activities for which incentives are offered and for which rewards may be gained. This suggestion is important, particularly for the staff who have completed three or more years of service at NAIT. The two aspects worth serious attention in this regard are (a) the use of informal activities and (b) the attempt to increase the number of staff taking industrial leave.
3. The average age of the instructional staff and the low rate of staff turnover at NAIT are indicators that a number of the staff completed their formal training in the technical field some years ago. Although technological changes are rapid, upgrading in the technical

fields and industrial leave are the development activities least used by the staff at NAIT. One reason is that these activities are not recognized and rewarded adequately, compared to obtaining a university degree. There is a need to rectify this situation by encouraging interest and participation of staff in taking industrial leave. One way of doing this would be to develop policies and guidelines for rewarding successful industrial leave so as to be comparable to university upgrading. Additional approach is for the Staff Training and Personnel Development unit at NAIT to coordinate and assist with arrangements for industrial leave.

4. The fact that relatively highly qualified staff members questioned the suitability of the August in-service activity as the only orientation program for all newly recruited staff, must prompt management to consider reappraisal of the program. The expansion in the Institute's programs of studies and the state of the economy, especially as it affects the job market, suggest that the qualifications of prospective employees are likely to improve in the coming years. The improvement will occur in both technological knowledge and instructional competence. Therefore, the orientation program requires a review regarding its purpose, content and strategies for implementation. That is, it may be necessary to provide different programs to meet the needs of different groups.

5. A way of improving individual performance as well as to improve the system as a whole is through research activities. This study found that the staff with higher educational qualifications, such as master's degrees, complained about the lack of variety in the development activities at NAIT. Some of these staff have already developed research skills from their previous training. Therefore, it would be of great benefit to them and to the Institute if they were encouraged to design and carry out research projects that related to their work. Such an approach will not only improve organizational performance, but it will also increase the interest and participation of staff in development activities. An initial step toward implementation of this activity would be to develop guidelines for the submission, approval and support of research projects.

6. There appeared to be a demand from the staff for greater involvement in the determination of needs and implementation of the Institute-based workshops and in-service activities. Such a demand could be met through the use of departments and program units as the centers for needs determination. Also, by acting as the coordinating and resource unit, the Staff Training and Personnel Development at NAIT could locate appropriate resource personnel within the Institute as well as from other external agencies to aid in implementation. Such external agencies include business, industries, and other adult and higher educational institution or organization.
7. The results showed that the number of staff from the Industrial division that participated in development activities was higher than the number from the remaining two divisions -- the Business and Applied Arts and the Engineering Technology divisions. This situation may demonstrate that the program emphasis tends to favour the needs of the staff of the Industrial division more than the needs of the other instructional staff. Therefore, the program definition ought to be broadened and diversified to provide for the needs of all instructional staff. This requires that both formal and informal activities be encouraged. That is, while formal programs, such as university upgrading, will provide for the needs of many staff from the Industrial division; informal activities, such as individual research projects and practicum in business and industry, will provide for the needs of many staff of the other two divisions.
8. Communication of information is typically a problem in human service organizations. Management must, therefore, make sure that specific information gets to the members of the organization who will be required to use that information. Thus, all information on staff development must reach the individual staff members. In this respect, it is proposed that annual reports on staff development be distributed to all faculty. These reports could contain information on (a) any changes in the definition and objectives of staff development at NAIT; (b) formal and informal activities that have been used during the year to promote staff development; (c) study leaves granted to staff for either educational

purposes or for industrial purposes; (d) research and other projects approved during the year; and (e) conferences attended by instructional staff.

9. Since this study applies specifically to NAIT, a copy of the thesis will be given to the Director of Research and Academic Development. The Director should make the thesis available to any interested groups and individuals. It is further recommended that copies be made of the final chapter, especially the section on findings and implications, for the members of NAIT Executive Council that approved the project; the Manager of Staff Training and Personnel Development; and chairmen of departments. In addition, the members of the Staff Development Committee and of the executive of the Academic Staff Association should get copies of the final chapter.

Suggestions for Further Research

Unlike many studies in this field, that examine staff development needs, this study was concerned with the assessment of effectiveness of the program at NAIT as perceived by the staff. Two models were developed. One provided a framework for examining the balance in the orientation of the program between organizational and individual competence. The other provided a rationale for selecting assessment variables. In order to improve upon the validity of the models the following areas must be considered for further study:

1. A replication of this study at NAIT with the same models and similar assessment indicators, at a later date, would contribute to the validity and usefulness of the models.
2. A similar study in community colleges would be useful to test the generalizability of some of the findings of this study and might also show the differences in staff development approaches between different types of institutions.
3. One topic that appears not to have been studied adequately is the relationship between inputs to the staff development program and the outcomes of the effort. This study has explored and found some positive relationships between some of the input and output variables. For example, managerial practices, relevant activities and organizational climate

were found to be the major sources for predicting the outcomes of staff development. While this study only explored the possibility of linear relationships between the dependent and independent variables, the results indicate that it might be useful to explore the use of experimental design to determine possible cause-and-effect relationships between some of these approaches or input variables and the outcomes of staff development. Such a study would be beneficial to both organization theorists and practitioners in their attempts to improve organizational effectiveness. In addition to the above suggestions, some important relationships between the variables, as revealed by the study, can be subjected to further investigation. The most important of such relationships are stated below in the form of hypotheses:

a. *Hypothesis no. 1*: An increase in the level of formal education of faculty decreases faculty participation in formal development activities.

b. *Hypothesis no. 2*: An increase in the institutional responsibility of the staff member increases interest in staff development.

c. *Hypothesis no. 3*: As involvement of the faculty association in staff development increases the number of policies related to monetary rewards increases.

d. *Hypothesis no. 4*: The effectiveness of staff development is dependent upon the leadership of the program.

e. *Hypothesis no. 5*: The effectiveness of staff development is dependent upon the relevance of the activities used.

f. *Hypothesis no. 6*: The effectiveness of staff development is dependent upon the overall organizational climate.

F. Concluding Statement

The ultimate aim of staff development is to improve organizational effectiveness. Accordingly, staff development becomes a continuous process since each situation and each individual can probably be made better. Thus, as shown by the assessment model used in this

study, management must redefine regularly its approaches to staff development to reflect the changing needs of individual members and the requirements of the organization as a whole. This study suggests two approaches that can be useful in addressing this concept of continuity in staff development. One approach is to develop a definition of staff development that is comprehensive enough to embrace various characteristics and dimensions of the phenomenon. Such a definition should address the perspectives of organizational and individual competence. The other is to conduct a periodic assessment of the program so as to ensure its consonance with current realities and future probabilities.

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APPENDIX A: SURVEY INSTRUMENT

APPENDIX A.4.1

Department of Educational Administration
University of Alberta
Edmonton, Alberta
T6G 2G5
April 1, 1985

To the Academic Staff Member of NAIT

COMPLETION OF THE ATTACHED QUESTIONNAIRE

I have attached a copy of the "NAIT Staff Development Program Questionnaire" and I am asking you to complete it. You will need about 25 minutes to answer the questions.

The purpose of the questionnaire is to collect information from the academic staff of NAIT about their perceptions of the strategies, implementation, objectives and outcomes of the Institute's staff-development program. Your completion of the questionnaire is essential for the success of this study since the study is based on a randomly selected sample.

The responses will be analysed and reported only in the form of group statistics so that your anonymity and the confidentiality of your individual responses will be protected. The results of this study should provide valuable information for staff development planning at NAIT as well as data for my thesis at the University of Alberta. This project, of course, has been approved by the senior administration of the Institute and your co-operation would be greatly appreciated.

Therefore, I am requesting you to complete the attached questionnaire and return it to your department chairman by April 19, 1985. Should you have any questions regarding the study or the questionnaire please call Les Morgan at 471-7006.

Your time and co-operation to participate in this study is greatly appreciated.

Yours sincerely,

Nicholas Aidoo-Taylor

APPENDIX A.4.2

QUESTIONNAIRE FOR A STUDY OF STAFF DEVELOPMENT FOR THE ACADEMIC STAFF AT NAIT

PART I : BIOGRAPHICAL INFORMATION

The purpose of this part of the questionnaire is to collect relevant information on the academic staff at NAIT as it relates to staff development needs. Please indicate your responses by checking (X) or writing in the spaces provided.

1. What is your present position at NAIT?
( ) a. instructor
( ) b. instructor senior
( ) c. program head
( ) d. other (specify)

2. Which is your Division?
( ) a. Bus and App. Arts
( ) b. Industrial
( ) c. Technology
( ) d. Other (specify)

3. State your department and program below :

a. Department _____

b. Program _____

4. What is your age category?
( ) a. under 30 years
( ) b. 30 - 35
( ) c. 36 - 40
( ) d. 41 - 45
( ) e. 46 - 50
( ) f. over 50 years
( ) g. Prefer not to answer

5. What teacher education programs have you completed?
( ) a. B. Ed.
( ) b. M. Ed.
( ) c. Post Grad Diploma
( ) d. Ph. D.
( ) e. NAIT August In-Service
( ) f. Other (specify)

6. What is your sex ( ) a. Male ( ) b. Female ( ) c. Prefer not to answer

7. State in the appropriate spaces below your highest educational qualifications as applicable in the following four categories :

a. University Degree(s) _____
b. College or Technical Diploma _____
c. Journeyman's Certificate(s) _____
d. Others _____

8. Are you currently involved in continuing your education? If you are, provide the following information:

a. University degree pursuing _____
b. University department enrolled in _____
c. College/Technical program pursuing _____
d. Year of program enrolled (circle one) 1st 2nd 3rd 4th

9. Including the current academic year, check below your experiences as an instructor/teacher:

Years of Teaching Experience	At NAIT	In Total
a. Up to 1 year	( )	( )
b. 1 - 2 years	( )	( )
c. 3 - 5 years	( )	( )
d. 6 - 10 years	( )	( )
e. over 10 years	( )	( )

10. How many years of work experience in industry/business do you have? Please indicate your answer below:

Years of Work Experience	In a Job Related to the Courses You are Teaching	Total Work Experience
a. Under 1 year	( )	( )
b. 1 - 2 years	( )	( )
c. 3 - 5 years	( )	( )
d. 6 - 10 years	( )	( )
e. over10 years	( )	( )

11. Indicate in the appropriate spaces below the number of months of leave granted to you for **staff development purposes** since employed by NAIT:

Duration of Leave	Educational Leave	Industrial Leave	Work Experience
a. Nil	( )	( )	( )
b. Under one month	( )	( )	( )
c. 1 - 5 months	( )	( )	( )
d. 6 - 12 months	( )	( )	( )
e. over 12 months	( )	( )	( )

12. Do you combine supervision of instructors (or administrative duties) with teaching task? If you do, specify the proportions (in percentages) of your working time per week in the following two areas :

    a. Percentage of time per week for classroom teaching _____
    b. Percentage of time per week for supervision/administration _____

13. Do you spend time beyond your regular work hours per week at NAIT for teaching and/or supervision? If you do, state below the average number(s) of extra hours per week :

    a. Extra time for teaching _____
    b. Extra time for supervision _____

_____

PART II: PROGRAM CHARACTERISTICS

This part of the questionnaire consists of **TWO SECTIONS**. Each section represents a selected dimension for describing the staff development program at NAIT.

SECTION A : POLICIES AND FUNDING OF THE PROGRAM

Read each item carefully and rate it on the **FIVE-POINT SCALE** by drawing a circle around the appropriate number to indicate the extent to which the item applies to the staff development program at NAIT.

RESPONSE KEY :

1 = UNCERTAIN; 2 = NEVER APPLIES; 3 = SELDOM APPLIES; 4 = GENERALLY APPLIES; 5 = ALWAYS APPLIES

1.	The staff development policies at NAIT describe the benefits to be gained by staff participation in the professional development activities	1 2 3 4 5
2.	The policies specify conditions of release time for staff participation in professional development activities	1 2 3 4 5
3.	The policies describe costs sharing procedures for staff participation in professional development activities	1 2 3 4 5
4.	The policies specify obligations of the individual staff in their contribution to the improved performance of the Institute	1 2 3 4 5
5.	The policies of the staff development program specify some conditions for personal improvement of the individual staff member	1 2 3 4 5
6.	The staff development funds are allocated to the various departments and units of the Institute	1 2 3 4 5
7.	The costs for undertaking part-time studies at the universities and other educational institutions are individuals' responsibilities	1 2 3 4 5
8.	Salary increases to the members of staff are used as a reward for the staff development efforts at NAIT	1 2 3 4 5
9.	Promotions within the Institute are used as a reward for the staff development efforts at NAIT	1 2 3 4 5

SECTION B : STRATEGIES AND ACTIVITIES FOR IMPLEMENTATION

The statements listed below describe the strategies and activities that may be used to conduct the staff development program. Draw a circle around the appropriate number to indicate the extent to which an item is applicable at NAIT.

RESPONSE KEY :

1 = UNCERTAIN; 2 = NEVER APPLIES; 3 = SELDOM APPLIES; 4 = GENERALLY APPLIES; 5 = ALWAYS APPLIES

10. The staff development needs at NAIT are determined by management	1 2 3 4 5
11. The Manager of Staff Training and Development and his staff provide individual assistance to all the instructional staff throughout the year	1 2 3 4 5
12. The program heads provide individual assistance to their staff on instructional-related matters	1 2 3 4 5
13. The various departments at NAIT determine their special staff development needs	1 2 3 4 5
14. The expertise of the staff members of NAIT is used in the implementation of the staff development program	1 2 3 4 5
15. The staff development program at NAIT is used to develop knowledge, skills and attitudes in a variety of areas	1 2 3 4 5
16. The staff development program at NAIT is provided through the use of various in-service activities organized within the Institute	1 2 3 4 5
17. The staff of a department review periodically, as a group, their instructional programs	1 2 3 4 5
18. An individual staff member who attends a conference outside the Institute reports on the conference to the staff in his/her program	1 2 3 4 5
19. An instructor attends another instructor's class in order to provide feedback and to exchange ideas	1 2 3 4 5
20. Personnel from the universities are invited to participate in workshops at NAIT and to share their expertise with the staff	1 2 3 4 5
21. Personnel from industry and business are invited to share their expertise with the staff at NAIT	1 2 3 4 5

PART III : PERCEPTIONS OF THE PROGRAM

This part of the questionnaire consists of **SIX SECTIONS** for assessing the perceptions of the staff regarding the state of the staff development program at NAIT.

SECTION A : OBJECTIVES OF THE PROGRAM

Draw a circle around the number that corresponds to the extent to which you **AGREE** with the following statements about the staff development program at NAIT.

RESPONSE KEY :

1 = COMPLETELY DISAGREE; 2 = MOSTLY DISAGREE; 3 = PARTLY AGREE; 4 = MOSTLY AGREE; 5 = COMPLETELY AGREE

1.	The Institute's definition of staff development is clear to me	1 2 3 4 5
2.	The aim of the staff development program at NAIT is clear to me	1 2 3 4 5
3.	The activities that constitute the staff development program at NAIT are clear to me	1 2 3 4 5
4.	The role and responsibilities of the Institute in the implementation of staff development at NAIT are clear to me	1 2 3 4 5
5.	The expectations and the involvement of the individual staff members in the staff development efforts at NAIT are clear to me	1 2 3 4 5
6.	The objectives of the staff development program at NAIT keep changing to meet the requirements of the Institute	1 2 3 4 5
7.	The emphasis of the staff development program at NAIT is to address the requirements of the Institute	1 2 3 4 5
8.	The staff development program at NAIT addresses the needs of the individual staff members	1 2 3 4 5

SECTION B : PRESENCE OF INPUT VARIABLES

Draw a circle around the number that corresponds to the extent to which you **AGREE** with the following statements about the staff development program at NAIT.

RESPONSE KEY :

1 = COMPLETELY DISAGREE; 2 = MOSTLY DISAGREE; 3 = PARTLY AGREE;
4 = MOSTLY AGREE; 5 = COMPLETELY AGREE

9.	The management at NAIT communicates the objectives and other relevant information on staff development to the instructional staff	1 2 3 4 5
10.	Resources are available to staff for practising the new ideas and skills they have learned from in-service activities	1 2 3 4 5
11.	The structure of the instructional departments at NAIT promotes implementation of the staff-development objectives	1 2 3 4 5
12.	The decision-making structure of NAIT promotes implementation of the staff development objectives	1 2 3 4 5
13.	The commitment of the staff to the goals and objectives of NAIT promotes implementation of the staff development objectives	1 2 3 4 5
14.	The budget for staff development activities at NAIT compares favourably with the budget for other areas of activities	1 2 3 4 5
15.	The rewards and incentives for the staff development efforts do recognize relevant university course work	1 2 3 4 5
16.	The rewards and incentives for the staff development efforts do recognize work experience in industries	1 2 3 4 5

SECTION C : STAFF DEVELOPMENT ACTIVITIES

The statements listed below describe some approaches that are used to carry out the objectives of staff development. **Draw** a circle around the appropriate number to show the extent to which you agree with the following statements about the staff development program at NAIT.

RESPONSE KEY :

1 = COMPLETELY DISAGREE; 2 = MOSTLY DISAGREE; 3 = PARTLY AGREE;
4 = MOSTLY AGREE; 5 = COMPLETELY AGREE

17.	Individual staff members determine their professional needs and pursue them	1 2 3 4 5
18.	A co-operative approach is used to determine needs and objectives of the staff development program at NAIT	1 2 3 4 5
19.	Initiatives by groups and individuals towards staff development efforts are encouraged at NAIT	1 2 3 4 5
20.	The management assists the staff members to arrange for industrial work experience	1 2 3 4 5
21.	Relevant university credit courses are regarded as part of the staff development efforts at NAIT	1 2 3 4 5
22.	Evaluation of the instructional staff by the students is regarded as a part of the staff development program at NAIT	1 2 3 4 5
23.	The staff development program at NAIT is used for the evaluation of the instructional staff	1 2 3 4 5
24.	The August in-service at NAIT helps to develop an understanding of the goals and practices of the Institute	1 2 3 4 5
25.	The August in-service at NAIT helps to develop teaching skills	1 2 3 4 5
26.	The June in-service at NAIT provides an opportunity to the instructional staff to improve their teaching skills	1 2 3 4 5

SECTION D : POSSIBLE OUTCOMES

In this section possible outcomes of staff development efforts are listed. Draw a circle around the appropriate number to indicate the extent to which you believe the staff development program at NAIT has influenced these outcomes.

RESPONSE KEY :

1 = NO EFFECT; 2 = LITTLE EFFECT; 3 = MODERATE EFFECT; 4 = ADEQUATE EFFECT; 5 = CONSIDERABLE EFFECT

1.	Has improved learning among students at NAIT	1 2 3 4 5
2.	Has increased the staff's knowledge of concepts and skills related to their teaching	1 2 3 4 5
3.	Has increased confidence of the staff in dealing with students	1 2 3 4 5
4.	Has improved the teaching performance of the academic staff	1 2 3 4 5
5.	Has increased staff awareness of the need for professional growth and continuing one's education	1 2 3 4 5
6.	Has increased staff awareness of the social and economic conditions that affect the work of the Institute	1 2 3 4 5
7.	Has provided the staff with greater understanding of the work of the Institute	1 2 3 4 5
8.	Has developed in the staff a team-work approach toward achieving the goals of the Institute	1 2 3 4 5
9.	Has increased job satisfaction among the instructional staff	1 2 3 4 5
10.	Has improved interaction among the instructional staff	1 2 3 4 5
11.	Has contributed to the continuing use of the Institute's acceptable teaching methods among the academic staff	1 2 3 4 5
12.	Has prepared individual staff members for future positions and responsibilities in the Institute	1 2 3 4 5
13.	Has improved the professional status of the instructional staff	1 2 3 4 5
14.	Has improved the image of NAIT within the community	1 2 3 4 5

SECTION E : FACTORS LIKELY TO PROMOTE STAFF DEVELOPMENT

The factors listed below are likely to promote the provision and implementation of the staff development program at NAIT. Indicate the degree of contribution by each factor.

RESPONSE KEY :

1 = NO EFFECT; 2 = SLIGHT; 3 = MODERATE; 4 = HIGH; 5 = VERY HIGH

		DEGREE OF CONTRIBUTION
1.	Changes which occur in the student enrolment	1 2 3 4 5
2.	Changes which occur in the Institute's program of study	1 2 3 4 5
3.	Changes taking place in industry and business	1 2 3 4 5
4.	The availability of resources to staff for implementation	1 2 3 4 5
5.	A co-operative attitude among the staff of the Institute	1 2 3 4 5
6.	The rewards and incentive structure at NAIT	1 2 3 4 5
7.	Clearly defined policies for staff development at NAIT	1 2 3 4 5
8.	The emphasis that is placed on the August In-service at NAIT	1 2 3 4 5

SECTION F : FACTORS LIKELY TO IMPEDE STAFF DEVELOPMENT

The factors listed below are likely to impede the provision and implementation of the staff development program at NAIT. Indicate the degree of obstruction by each factor.

RESPONSE KEY :

1 = NO EFFECT; 2 = SLIGHT; 3 = MODERATE; 4 = HIGH; 5 = VERY HIGH

		DEGREE OF OBSTRUCTION
1.	Inadequate communication within the Institute	1 2 3 4 5
2.	The program lacks relevancy to the needs of the individual staff members	1 2 3 4 5
3.	The lack of flexibility in the Institute's time-table	1 2 3 4 5
4.	General staff indifference to the introduction of new ideas	1 2 3 4 5
5.	Inappropriate timing of staff development activities	1 2 3 4 5
6.	The staff development efforts rely too much on university credit courses	1 2 3 4 5
7.	Too much emphasis is placed on organizational requirements	1 2 3 4 5
8.	The lack of policies on cost sharing for continuing one's education	1 2 3 4 5

GENERAL COMMENTS

Please list **THREE** comments or suggestions that you consider to be important regarding the objectives, activities and implementation of the staff development program at NAIT.

1. _____

_____

_____

_____

2. _____

_____

_____

_____

3. _____

_____

_____

_____

APPENDIX A.4.3

VALIDATION OF A SURVEY QUESTIONNAIRE IN A PILOT STUDY : A FORM FOR RECORDING COMMENTS AND SUGGESTIONS - SHEET 1

Please record your comments and suggestions for the various parts of the questionnaire as indicated below. Indicate **NIL** if you have no comments or suggestions for any part of the questionnaire. Also feel free to use the back of the sheet when necessary.

PART I : BIOGRAPHICAL INFORMATION

PART II : PROGRAM DESCRIPTION

SECTION A : POLICIES AND FUNDING OF STAFF DEVELOPMENT

SECTION B : STRATEGIES AND ACTIVITIES FOR IMPLEMENTATION

VALIDATION OF A SURVEY QUESTIONNAIRE IN A PILOT STUDY : A FORM FOR RECORDING COMMENTS AND SUGGESTIONS – SHEET 2

PART III : PERCEPTIONS OF EFFECTIVENESS OF STAFF DEVELOPMENT

SECTION A : OBJECTIVES OF THE PROGRAM

SECTION B : PRESENCE OF INPUT VARIABLES

SECTION C : STAFF DEVELOPMENT ACTIVITIES

SECTION D : POSSIBLE OUTCOMES OF THE PROGRAM

SECTION E : FACTORS INFLUENCING THE PROGRAM

APPENDIX B : ADDITIONAL TABLES

Table B.5.1
Distribution of Educational Qualifications
According to Instructional Divisions

Qualification	Bus/App Arts		Industrial		Eng Tech	
	N	%	N	%	N	%
Journeyman	7	25.9	34	70.8	4	12.1
College Diploma	3	11.1	4	8.3	3	9.1
Bachelor Degree	9	33.3	7	14.6	18	54.5
Graduate Diploma	0	0	1	2.1	1	3.0
Graduate Degree	8	29.7	2	4.2	7	21.3
Total	27	100.0	48	100.0	33	100.0

Table B.5.2
Teacher Education Completed According to Instructional Divisions

Teacher Education Program Completed	Bus/App Arts		Industrial		Eng Tech	
	N	%	N	%	N	%
NAIT In-service	22	78.5	37	82.3	21	67.7
B.Ed	4	14.3	4	8.9	5	16.1
Graduate Diploma	0	0	1	2.2	1	3.2
M.Ed.	2	7.2	1	2.2	2	6.5
Other	0	0	2	4.4	2	6.5
Total	28	100.0	45	100.0	31	100.0

Table B.5.3
Enrolment in Formal Continuing Education
According to Instructional Divisions

Continuing Education Program	Bus/App Arts		Industrial		Eng Tech	
	N	%	N	%	N	%
None	23	82.1	27	56.3	26	78.8
College Program	1	3.6	4	8.3	1	3.0
Bachelor's Program	1	3.6	15	31.3	4	12.1
Graduate Program	3	10.7	2	4.1	2	6.1
Total	28	100.0	48	100.0	33	100.0

Table B.5.4
Length of Service at NAIT According to Instructional Divisions

Years of Service at NAIT	Bus/App Arts		Industrial		Eng Tech	
	N	%	N	%	N	%
3 - 5 years	3	10.7	12	25.0	6	18.2
6 - 10 years	8	28.6	17	35.4	6	18.2
Over 10 years	17	60.7	19	39.6	21	63.6
Total	28	100.0	48	100.0	33	100.0

Table B.5.5
Educational Leave According to Instructional Divisions

Duration of Leave	Bus/App Arts		Industrial		Eng Tech	
	N	%	N	%	N	%
Nil	19	67.8	34	70.9	21	63.5
under one month	0	0	0	0	2	6.1
1 - 5 months	5	17.9	0	0	2	6.1
6 - 12 months	3	10.7	11	22.9	6	18.2
Over 12 months	1	3.6	3	6.2	2	6.1
Total	28	100.0	48	100.0	33	100.0

Table B.5.6
Industrial Leave According to Instructional Divisions

Duration of Leave	Bus/App Arts		Industrial		Eng Tech	
	N	%	N	%	N	%
Nil	16	57.2	43	89.6	26	78.7
Under one month	1	3.6	3	6.3	2	6.1
1 - 5 months	5	17.9	2	4.1	2	6.1
6 - 12 months	4	14.2	0	0	2	6.1
Over 12months	2	7.1	0	0	1	3.0
Total	28	100.0	48	100.0	33	100.0

Table B.5.7
Length of Related Work Experience According to Instructional Divisions

Length of Work Experience	Bus/App Arts		Industrial		Eng Tech	
	N	%	N	%	N	%
Nil	1	3.6	1	2.0	2	6.0
under one year	1	3.6	0	0	3	9.1
1 - 2 years	0	0	0	0	2	6.0
3 - 5 years	7	25.0	2	4.2	9	27.3
Over 5 years	19	67.8	45	93.8	17	51.6
Total	28	100.0	48	100.0	33	100.0

Table B.5.8
One-Way Analysis of Variance of Qualifications

No.	Groups	N	Mean	S.D.	F-Ratio	Significantly Different Groups
1.	Business & Applied	28	2.86	1.63	16.22**	1 > 2
2.	Industrial	48	1.60	1.09		and
3.	Engineering Technology	33	3.12	1.22		3 > 2

** Significant beyond the .01 level
Higher mean value indicates higher qualifications for the group

Table B.5.9
One-Way Analysis of Variance of Involvement
in Continuing Education

No.	Groups	N	Mean	S.D.	F-Ratio	Significantly Different Groups
1.	Business & Applied	28	.18	.39	3.89*	2 > 1
2.	Industrial	48	.44	.50		and
3.	Engineering Technology	33	.21	.42		2 > 3

* Significant at the .05 level
Higher mean value indicates higher involvment in continuing education

Table B.5.10
One-Way Analysis of Variance of Educational Leave

No.	Groups	N	Mean	S.D.	F-Ratio	Significantly Different Groups
1.	Business & Applied	28	1.64	1.45	.38	None
2.	Industrial	48	1.88	1.55		
3.	Engineering Technology	33	1.97	1.42		

Higher mean value indicates higher involvement in educational leave

Table B.5.11
One-Way Analysis of Variance of Industrial Leave

No.	Groups	N	Mean	S.D.	F-Ratio	Significantly Different Groups
1.	Business & Applied	28	1.93	1.61	6.44**	1 > 2
2.	Industrial	48	1.02	.60		
3.	Engineering Technology	33	1.45	1.06		

** Significant beyond the .01 level
Higher mean value indicates higher involvement in industrial leave

Table B.5.12
One-Way Analysis of Variance of Work Experience

No.	Groups	N	Mean	S.D.	F-Ratio	Significantly Different Groups
1.	Business & Applied	28	3.86	1.24	8.2**	2 > 1
2.	Industrial	48	4.54	.87		and
3.	Engineering Technology	33	3.45	1.56		2 > 3

** Significant at the .01 level
Higher mean value indicates longer related work-experience

Table B.5.13
Intercorrelations of the Items Used to Describe the Staff Development Program
N = 109

	V1	V2	V3	V4	V5	V6	V7	V8	V9	V10	V11	V12	V13	V14	V15	V16	V17	V18	V19	V20	V21
V1	1.00																				
V2	.06	1.00																			
V3	-.03	.43	1.00																		
V4	.24	.06	.34	1.00																	
V5	-.06	-.21	-.05	.32	1.00																
V6	.35	.39	.44	.35	.17	1.00															
V7	-.24	-.33	.03	-.16	.05	-.11	1.00														
V8	-.18	-.22	-.33	.07	.05	-.20	.09	1.00													
V9	-.32	-.17	-.18	.14	.18	-.22	-.06	.40	1.00												
V10	.33	-.01	.10	.05	.01	.46	.32	.23	-.05	1.00											
V11	.44	.19	.01	.11	.15	.35	-.13	-.59	-.10	-.10	1.00										
V12	-.03	.02	.10	-.20	.11	.12	.14	-.47	.13	.03	.55	1.00									
V13	.15	.04	.22	.28	.24	.38	.14	-.16	.07	-.01	.64	.59	1.00								
V14	.46	-.09	-.05	.08	.35	.18	-.07	-.45	-.19	-.22	.73	.50	.55	1.00							
V15	.29	.13	.00	.00	.00	.49	.00	-.35	-.40	-.07	.71	.33	.51	.60	1.00						
V16	-.16	-.24	-.04	.02	.11	-.16	.04	-.44	-.03	-.50	.26	.22	.19	.46	.24	1.00					
V17	-.27	.24	.07	-.15	-.11	-.11	.13	-.35	.44	-.35	.41	.56	.27	.20	.08	.27	1.00				
V18	-.14	-.38	-.29	.12	.48	-.13	.24	.19	.50	.07	.06	.36	.24	.24	.00	.32	.09	1.00			
V19	-.10	.10	.43	.02	-.01	-.07	-.17	.10	.29	-.26	-.15	.15	.17	.15	-.19	-.01	.20	.07	1.00		
V20	.10	.08	.44	.41	-.31	.08	-.01	-.15	-.05	-.09	.29	.14	.38	.17	.31	.26	.19	-.04	.15	1.00	
V21	-.35	-.07	.07	.18	.10	.03	-.06	-.01	.18	-.35	.14	.20	.17	.18	.32	.34	.33	.17	.19	.45	1.00

r value of .21 is significant at the .05 level
r value of .42 is significant at the .01 level

Table B.5.14
Chi-Square Analysis of Respondents Indicating Awareness of Items Describing the Program According to Staff Positions

Item No.	Program Aspects Described by the Item	Instructors (1) N = 72 Aware	%	Supervisors (2) N = 37 Aware	%	Total N = 109 Aware	%	Chi-Sq Values	Sig Groups
	I. Aim of Program								
5.	Policies specify personal improvement	46	63.9	70	81.1	76	69.7	2.08	N.S.
15.	Program develops knowledge, skills and attitudes	53	73.6	33	89.2	86	78.9	2.69	N.S.
	II. Policies and Funding								
2.	Policies specify time release	54	75.0	32	86.5	86	78.9	1.31	N.S.
3.	Policies describe cost sharing	51	70.8	30	81.1	81	74.3	0.86	N.S.
4.	Policies specify individual obligation	48	66.7	30	81.1	78	71.6	1.84	N.S.
6.	Funds are allocated to departments	28	38.9	28	75.7	56	51.3	11.80**	2 > 1
7.	Individuals bear continiuing education cost	52	72.2	34	91.9	86	78.9	4.13*	2 > 1

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Table B.5.14 (continued)

Item No.	Program Aspects Described by the Item	Instructors (1) N = 72 Aware	%	Supervisors (2) N = 37 Aware	%	Total N = 109 Aware	%	Chi-Sq Values	Sig Groups
	III. Benefits and Rewards								
1.	Policies describe benefits	46	63.9	28	75.7	74	67.8	0.88	N.S.
8.	Salary increases are used as reward	58	80.6	30	81.1	88	80.7	0.0	N.S.
9.	Promotions are used as reward	49	68.1	27	73.0	76	69.7	0.42	N.S.
	IV. Strategies and Activities								
10.	Needs are determined by management	54	75.0	31	83.3	85	78.0	0.47	N.S.
11.	Staff development unit assist individuals	55	76.4	29	78.4	84	77.1	0.0	N.S.
12.	Program heads assist individual staff	68	94.4	37	100	105	96.3	0.85	N.S.
13.	Departments determine their needs	51	70 8	33	89.2	84	77.1	3.68*	2 > 1
14.	Expertise of the staff members is tapped	50	69.4	34	91.9	84	77.1	5.76**	2 > 1

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Table B.5.14 (continued)

Item No.	Program Aspects Described by the Item	Instructors (1) N = 72 Aware	%	Supervisors (2) N = 37 Aware	%	Total N = 109 Aware	%	Chi-Sq Values	Sig Groups
	Strategies and Activities (continuation)								
16.	Activities are organized within the Institute	67	93.1	35	94.6	102	93.6	0.0	N.S.
17.	Departments review their programs	69	95.8	35	94.6	104	95.4	0.0	N.S.
18.	Staff report on conference attendance	67	93.1	37	100	104	95.4	1.34	N.S.
19.	Instructors attend other instructors' classes	67	93.1	36	97.3	103	94.5	0.22	N.S.
20.	University personnel participate in workshops	50	69.4	28	75.7	78	71.7	0.21	N.S.
21.	Personnel from industries participate in workshops	62	86.1	34	91.9	96	88.1	0.32	N.S.

** Significant at .01 level
* Significant at .05 level

Table B.5.15
Chi-Square Analysis of Respondents Indicating Awareness of Items
Describing the Program According to Instructional Divisions

Item No.	Program Aspects Described by the Item	Bus. & App. Arts (1) N = 28 Aware	%	Industrial (2) N = 48 Aware	%	Eng. Tech. (3) N = 33 Aware	%	Chi-Sq Values
	I. Aim of Program							
5.	Policies specify personal improvement	19	6.79	34	70.8	23	69.7	0.35
15.	Program develops knowledge, skills and attitudes	22	78.6	41	85.4	23	69.7	2.90
	II. Policies and funding							
2.	Policies specify time release	23	82.1	38	79.2	25	75.8	0.37
3.	Policies describe cost sharing	18	64.3	38	79.2	25	75.8	2.10
4.	Policies specify individual obligation	16	57.1	40	83.3	22	66.7	6.52*
6.	Funds are allocated to departments	12	42.9	26	54.2	18	54.5	1.09
7.	Individuals bear continiuing education cost	23	82.1	37	77.1	26	78.8	0.35

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Table B.5.15 (continued)

Item No.	Program Aspects Described by the Item	Bus. & App. Arts (1) N = 28 Aware	%	Industrial (2) N = 48 Aware	%	Eng. Tech. (3) N = 33 Aware	%	Chi-Sq Values
	III. Benefits and Rewards							
1.	Policies describe benefits	17	60.7	36	75.0	21	63.6	2.58
8.	Salary increases are used as reward	20	71.4	42	87.5	26	78.8	3.03
9.	Promotions are used as reward	20	71.4	32	66.7	24	72.7	0.66
	IV. Strategies and Activities							
10.	Needs are determined by management	23	82.1	36	75.0	26	78.4	0.71
11.	Staff development unit assist individuals	21	75.0	38	79.2	25	75.8	0.17
12.	Program heads assist individual staff	27	96.4	46	95.8	32	97.0	0.07
13.	Departments determine their needs	23	82.1	34	70.8	27	81.8	1.88
14.	Expertise of the staff members is tapped	23	82.1	35	72.9	26	78.8	0.93

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Table B.5.15 (continued)

Item No.	Program Aspects Described by the Item	Bus. & App. Arts (1) N = 28 Aware	%	Industrial (2) N = 48 Aware	%	Eng. Tech. (3) N = 33 Aware	%	Chi-Sq Values
	Strategies and Activities (continuation)							
16.	Activities are organized within the Institute	26	92.9	45	93.6	31	93.9	0.33
17.	Departments review their programs	27	96.4	47	97.9	30	90.9	4.08
18.	Staff report on conference attendance	27	96.4	45	93.8	32	97.0	0.55
19.	Instructors attend other instructors' classes	27	96.4	46	95.8	30	90.9	1.18
20.	University personnel participate in workshops	18	64.3	32	66.7	28	84.8	4.16
21.	Personnel from industries participate in workshops	24	85.7	41	85.4	31	93.9	1.55

• Significant at .05 level

Table B.6.1
Number of Respondents Identifying Aspects that Require Attention
in the Open Ended Questions According to Staff Positions

Item No.	Aspect of Program Requiring Attention	Instructors	Supervisors	Total
	I. CLARITY OF PURPOSE			
1.	Not clear about the program objectives and individuals obligations	9	3	12
2.	Not sure of what constitute the activities of the program	7	4	11
	II. NEEDS ASSESSMENT			
3.	Team effort is required to detrmine staff development needs	0	3	3
4.	Staff and departmental input is required for identification of needs	6	4	10
	III. MANAGERIAL PRACTICES			
5.	It is more economical and effective to offer university courses at NAIT	3	1	4
6.	Workload and time-table prevent participation in development activities	8	4	12
7.	More funding and resources to be provided for improvement	4	4	8
8.	Improve communication of information on the program	5	4	9
9.	Inadequate use of the expertise of the Institute personnel	3	0	3

Table B.6.1 (continued)

Item No.	Aspect of Program Requiring Attention	Instructors	Supervisors	Total
	IV. ORGANIZATIONAL CLIMATE			
10.	More tangible and monetary rewards to be provided	3	2	5
11.	Program heads to offer more encouragement	2	0	2
12.	Satisfied with the NAIT organization	2	3	5
13.	The 4 for 5 plan passes on development costs to individual staff	2	2	4
14.	Rewards must recognize NAIT courses and other diplomas	3	1	4
15.	Other incentives for those at top of salary scales	2	4	6
	V. RELEVANT AND USEFUL ACTIVITIES			
16.	Far too much emphasis on university upgrading	4	3	7
17.	Emphasis to be given to upgrading in the technical fields	17	6	23
18.	Provide more psychology type of courses	3	3	6
19.	Bad timing of the June in-service at NAIT	14	4	18
20.	NAIT in-service is directed at technology not apprenticeship programs	3	0	3

Table B.6.1 (continued)

Item No.	Aspect of Program Requiring Attention	Instructors	Supervisors	Total
	RELEVANT AND USEFUL ACTIVITIES (continued)			
21.	August in-service is useful but not adequate for new instructors	2	0	2
22.	Instructor observation and rating by student be increased	2	1	3
23.	Lack of interest in informal activities such as research and conference attendance	3	2	5
24.	August in-service not suitable for instructors with higher qualifications	3	1	4
	VI. ACHIEVING THE OBJECTIVES			
25.	Development activities to be relevant to individuals' needs	2	1	3
26.	Industrial leaves are not taken because of no financial gains	6	7	13
27.	Staff development must include career development	2	0	2

Table B.6.2
Number of Respondents Identifying Aspects that Require Attention in the Open Ended Questions According to Instructional Divisions

Item No.	Aspect of Program Requiring Attention	Division I	Division II	Division III
	I. CLARITY OF PURPOSE			
1.	Not clear about the program objectives and individuals obligations	4	3	5
2.	Not sure of what constitute the activities of the program	3	3	5
	II. NEEDS ASSESSMENT			
3.	Team effort is required to detrmine staff development needs	2	0	1
4.	Staff and departmental input is required for identification of needs	1	4	5
	III. MANAGERIAL PRACTICES			
5.	It is more economical and effective to offer university courses at NAIT	1	3	0
6.	Workload and time-table prevent participation in development activities	5	2	5
7.	More funding and resources to be provided for improvement	4	3	1
8.	Improve communication of information on the program	2	5	2
9.	Inadequate use of the expertise of the Institute personnel	1	0	2

Table B.6.2 (continued)

Item No.	Aspect of Program Requiring Attention	Division I	Division II	Division III
	IV. ORGANIZATIONAL CLIMATE			
10.	More tangible and monetary rewards to be provided	2	2	1
11.	Program heads to offer more encouragement	1	1	0
12.	Satisfied with the NAIT organization	1	2	2
13.	The 4 for 5 plan passes on development costs to individual staff	2	2	0
14.	Rewards must recognize NAIT courses and other diplomas	2	2	0
15.	Other incentives for those at top of salary scales	3	1	2
	V. RELEVANT AND USEFUL ACTIVITIES			
16.	Far too much emphasis on university upgrading	2	4	1
17.	Emphasis to be given to upgrading in the technical fields	8	9	6
18.	Provide more psychology type of courses	2	4	0
19.	Bad timing of the June in-service at NAIT	3	13	2
20.	NAIT in-service is directed at technology not apprenticeship programs	0	3	0

Table B.6.2 (continued)

Item No.	Aspect of Program Requiring Attention	Division I	Division II	Division III
	RELEVANT AND USEFUL ACTIVITIES (continued)			
21.	August in-service is useful but not adequate for new instructors	0	2	0
22.	Instructor observation and rating by student be increased	0	2	1
23.	Lack of interest in informal activities such as research and conference attendance	1	2	2
24.	August in-service not suitable for instructors with higher qualifications	0	0	4
	VI. ACHIEVING THE OBJECTIVES			
25.	Development activities to be relevant to individuals' needs	2	1	0
26.	Industrial leaves are not taken because of no financial gains	2	10	1
27.	Staff development must include career development	2	0	0

Table B.6.3
Multiple Regression for Predicting Student Learning as Criterion
With the Six Approaches as the Predicting (Independent) Variables
Using the Forward-Selection Stepwise Technique

Independent Variables	Multiple R	R^2	Increase in R^2
Managerial practices	.67	.45	
Relevant activities	.73	.53	.08
Achieving objectives	.75	.56	.03

Table B.6.4
Multiple Regression for Predicting Staff Knowledge as Criterion
With the Six Approaches as the Predicting (Independent) Variables
Using the Forward-Selection Stepwise Technique

Independent Variables	Multiple R	R^2	Increase in R^2
Managerial practices	.68	.45	
Relevant activities	.75	.56	.11
Achieving objectives	.77	.60	.04

Table B.6.5
Multiple Regression for Predicting Staff Confidence as Criterion
With the Six Approaches as the Predicting (Independent) Variables
Using the Forward-Selection Stepwise Technique

Independent Variables	Multiple R	R^2	Increase in R^2
Relevant activities	.67	.45	
Managerial practices	.73	.52	.07

Table B.6.6
Multiple Regression for Predicting Teaching Performance as Criterion
With the Six Approaches as the Predicting (Independent) Variables
Using the Forward-Selection Stepwise Technique

Independent Variables	Multiple R	R^2	Increase in R^2
Relevant activities	.70	.49	
Organizational climate	.77	.59	.10
Achieving objectives	.78	.61	.02

Table B.6.7
Multiple Regression for Predicting Professinal Awareness as Criterion
With the Six Approaches as the Predicting (Independent) Variables
Using the Forward-Selection Stepwise Technique

Independent Variables	Multiple R	R^2	Increase in R^2
Relevant activities	.57	.33	
Organizational climate	.64	.41	.08

Table B.6.8
Multiple Regression for Predicting Environmental Awareness as Criterion
With the Six Approaches as the Predicting (Independent) Variables
Using the Forward-Selection Stepwise Technique

Independent Variables	Multiple R	R^2	Increase in R^2
Managerial practices	.57	.33	
Relevant activities	.62	.38	.05
Organizational climate	.65	.43	.05

Table B.6.9
Multiple Regression for Predicting Institute Goals as Criterion
With the Six Approaches as the Predicting (Independent) Variables
Using the Forward-Selection Stepwise Technique

Independent Variables	Multiple R	R^2	Increase in R^2
Relevant activities	.51	.26	
Organizational climate	.59	.35	.09

Table B.6.10
Multiple Regression for Predicting Team Work as Criterion
With the Six Approaches as the Predicting (Independent) Variables
Using the Forward-Selection Stepwise Technique

Independent Variables	Multiple R	R^2	Increase in R^2
Managerial practices	.64	.41	
Relevant activities	.70	.49	.08
Needs assessment	.72	.52	.03

Table B.6.11
Multiple Regression for Predicting Job Satisfaction as Criterion
With the Six Approaches as the Predicting (Independent) Variables
Using the Forward-Selection Stepwise Technique

Independent Variables	Multiple R	R^2	Increase in R^2
Managerial practices	.62	.39	
Achieving objectives	.65	.42	.03

Table B.6.12
Multiple Regression for Predicting Staff Interaction as Criterion
With the Six Approaches as the Predicting (Independent) Variables
Using the Forward-Selection Stepwise Technique

Independent Variables	Multiple R	R^2	Increase in R^2
Relevant activities	.56	.31	
Organizational climate	.64	.42	.11
Achieving objectives	.67	.44	.02

Table B.6.13
Multiple Regression for Predicting Teaching Methods as Criterion
With the Six Approaches as the Predicting (Independent) Variables
Using the Forward-Selection Stepwise Technique

Independent Variables	Multiple R	R^2	Increase in R^2
Relevant activities	.64	.41	
Organizational climate	.72	.52	.11

Table B.6.14
Multiple Regression for Predicting Career Development as Criterion
With the Six Approaches as the Predicting (Independent) Variables
Using the Forward-Selection Stepwise Technique

Independent Variables	Multiple R	R^2	Increase in R^2
Managerial practices	.64	.41	

Table B.6.15
Multiple Regression for Predicting Professional Status as Criterion With the Six Approaches as the Predicting (Independent) Variables Using the Forward-Selection Stepwise Technique

Independent Variables	Multiple R	R^2	Increase in R^2
Managerial practices	.52	.28	
Achieving objectives	.57	.33	.05
Relevant activities	.59	.36	.03

Table B.6.16
Multiple Regression for Predicting Institute's Image as Criterion With the Six Approaches as the Predicting (Independent) Variables Using the Forward-Selection Stepwise Technique

Independent Variables	Multiple R	R^2	Increase in R^2
Relevant activities	.63	.40	
Organizational climate	.69	.48	.08

APPENDIX C: ADDITIONAL FIGURES